

# **The Aesthetics of Photographic Production: Why Material Practices Matter**

A thesis submitted in partial fulfilment  
of the requirements of Nottingham Trent University  
for the degree of Doctor of Philosophy

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## Abstract

The thesis explores the often overlooked sensory and material aspects of photographic production, challenging the traditional focus on the photograph as image. Questioning the prevailing view that photographic research is concerned only with the final image, the thesis contends that the processes of making in commercial laboratories and manufacturing facilities also have aesthetic significance. The research has two aims: to redirect attention to the aesthetic aspects of photographic making beyond the photograph itself, and to examine the implications of this shift of focus for the concept of photographic practice. Based on practice-based research across diverse photographic settings, the study captures aesthetic nuances of C-type printing that include the tensioning, fogging, and tearing of photosensitive paper. An event-centric approach moves beyond the visual to explore the multisensory experiences of listening, touching, and feeling that inform photographic production and acknowledges the contributions of more-than-human agency. The multimodal presentation of findings combines traditional written analysis with experiential exposition to highlight the importance of non-visual outputs in photographic making. The research makes four contributions to photography studies. Firstly, based on a theoretical review that critiques the prevailing emphasis on the photograph that is always already made, the neglect of photographic making and its co-constitutive dimension is highlighted. Secondly, an immersive researcher-practitioner approach provides empirical insights into often-hidden practices of everyday photographic production demonstrating that photographic making extends beyond words and visibility. Thirdly, the novel artistic research methodology highlights the importance of showing as well as telling, using diverse exhibition formats to convey the embodied dimension of photographic making. Finally, in-depth case examples reveal the complex interplay of materials, technology, and human and non-human agency that surpasses the conventional visual-centric, human-centric and photograph-centric paradigm. This more nuanced conception of photographic practice comprehends and embraces the sensory and material complexities of photography and the medium's aesthetic dimension beyond the image.

**Keywords:** photographic practice, post-human photography, sensory aesthetics, artistic research

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## Introduction

The concept of photographic practice is traditionally understood by analysing photographs or interviewing photographers about their work. Moving away from these conventional reference points, the present study instead explores the often-hidden practices of photographic making in commercial production settings, including processing laboratories and manufacturing facilities where photographic materials are produced. This shift of focus facilitates an examination of the emergence and dynamic interplay of photographic practices that are frequently overlooked in traditional photography scholarship and practice. While prevailing accounts of photographic practice typically emphasise the photograph and its interpretation, the processes of photographic making are neglected and poorly understood. By focusing on the material practices observed in photographic production environments, the present practice-based research elucidates how the interplay of technologies, photographic materials, and image technicians shapes the emergence of photographic practices. In line with the post-humanist turn (Rubinstein 2016, 2018; Zylinska 2017), this alternative approach challenges the prevailing human-centric emphasis on the photograph and argues for a fuller account of photographic making that acknowledges the dynamic contributions of all relevant agents, both human and non-human.

## Research questions

The present research addresses two key questions: *'In photographic production, what else is aesthetically made beyond the photograph, and what are the implications for how we conceptualise photographic practice?'* By interrogating the significance of everyday material practices in photographic production settings, the narrative shifts from theorising about what a photograph is to a fuller understanding

of what these practices contribute to photographic making. This change of perspective prompted the development of novel methodologies to look beyond the conventional preoccupation with the photographer and the photograph.

### **Research contributions**

The study makes four contributions to existing research and practice. 1) A theoretical review that critiques the dominant focus on the photograph that is always already made, highlights the neglect of photographic making and its co-constitutive dimension. 2) Hands-on immersion in commercial photographic production settings yielded empirical insights into everyday practices that typically remain hidden from view and extend beyond words and visibility. 3) The novel artistic research methodology developed here reinforces narrative modes of showing and telling, utilising multimodal exposition formats to convey the embodied dimension of photographic making. 4) In-depth case examples illuminate the complex interplay of materials, technology, and human and non-human agents, offering a more nuanced conception of photographic practice beyond the conventional emphasis on the visual, the human, and the final photograph.

### **Research context**

Reframing the concept of photographic practice to encompass its sensory and material complexities also extended the scope of the empirical investigation beyond the confines of conventional photography scholarship. As long ago as the 1980s, Victor Burgin (1984, p. 61) acknowledged that the object of photography theory is, at base, the photograph, and that this preoccupation tends to overshadow the diverse and intricate practices of photographic making. Barthes' discussion of photographic practices also acknowledged the centrality of the photograph in the triad of photographer, referent (the subject of the photograph), and viewer and the

corresponding practices: to do (to make),<sup>1</sup> to undergo, and to look (1984, p. 9). Barthes further conceded that his own lack of experience as a photographer precluded any deeper exploration of practices related to photographic making.

Yet, despite the general consensus that photography theory should extend beyond the photograph to the processes of making, scholarly discourse has remained preoccupied with the theoretical question ‘What is a photograph?’ rather than asking ‘What constitutes photographic practice?’ (e.g. Elkins (2011), Squiers (2014), and Azoulay (2010)). Building on Burgin and Barthes’ earlier critical insights, the present study set out to develop a fuller understanding of photographic practice and its aesthetic dimension beyond the final photograph by focusing instead on the procedural and material dimensions of photographic making commercial production settings.

## **Project background**

The rationale for the present project began to take shape during my time as a research fellow at Bern University of the Arts. As part of a research initiative funded by the Swiss National Science Foundation (May 2011 to October 2012), I collaborated with an ethnographer and another photographic artist to elucidate alternative perceptions of photographic practice. The ethnographer observed my artistic inquiry into the properties of photographic materials – specifically, the interaction of photosensitive film with the edges of the film roll canister during insertion into the camera. The ensuing investigations revealed that photographic practice can be fully understood only by moving beyond the usual focus on the

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<sup>1</sup> In Barthes’ original version of ‘La Chambre Claire’ the three practices were ‘faire, subir, regarder’; the English translation of ‘faire’ as ‘to do’ is challenged here as ‘to make’ (1980: 22).



photograph and the photographer. This early insight informed the development of the present study.

During that earlier project, the observation of my practice focused on activities that are often overlooked, as the accompanying film segments known as *rebates* are typically discarded (Fig. 1). To challenge the conventional view of photographic artefacts, I processed, mounted, and framed these rebates for my solo exhibition at Photogarage Zurich in 2013 (Figs. 2 and 3). The exhibition foregrounded the intricate material interactions involved in the practice of inserting a film roll into the camera body, which were not visible in the fixed photographic prints.

Despite the comprehensiveness of the ethnographic observations and interviews, these methods were unable to capture the subtleties of the practice I explored beyond my own narratives. This approach could not adequately convey the complex material dynamics of the interplay between the light, the photosensitive material, and my tactile engagement with the film roll canister. Constrained by the limitations of language and the one-sidedness of my practitioner perspective, the struggle to convey the nuances of these interactions highlighted the need for a different approach beyond the analysis of the finished photograph and the photographer's human-centric narrative.



**Fig. 1: Andrea Jaeger, 'XA Negativ', XA series [scanned film negative].**



**Fig. 2: Andrea Jaeger, 'Herzblut', XA series [lightjet print on photographic paper], mounted on dibond, framed]; from the solo show 'experimentum' at Photgarage Zurich, 2013. (This work precedes the PhD research.)**



**Fig. 3: Andrea Jaeger, *experimentum* [installation shot]; solo show, Photgarage, Zurich.**

## **Research setting and focus**

The research inquiry was situated within commercial settings of photographic production to foreground two main arguments. Firstly, the study aimed to challenge the traditional view that positions the photographer as the central figure in photographic practices. By placing the inquiry within commercial photographic environments rather than artist-focused darkrooms, the research decentralised the photographer's role and instead emphasised the aesthetic and operational processes across the entire production workflow. This approach allowed for a broader view of the collaborative and technical dynamics inherent in commercial production, acknowledging that photography is shaped not only by human agents but also by the more-than-human agencies embedded in advanced technology and equipment. Unlike the experimental focus of art school darkrooms—where practice centres on learning and creative exploration—commercial settings underscore the seamless integration of complex, everyday professional practices, thereby bringing typically 'hidden' aspects of production to the forefront. Secondly, commercial production settings provided access to industry-standard technology and equipment, allowing the research to examine how these more-than-human agents actively shape photographic processes. By focusing on the role of advanced tools in these environments, the study moved beyond a human-centric perspective, attending to the ways in which technology influences and even directs production practices. This shift uncovers underexplored dimensions of photographic production, highlighting the interplay between human and non-human factors that drive the aesthetics and workflows in professional photography settings.

The research was conducted at two commercial laboratories and two manufacturing facilities where photographic materials are produced. These locations were chosen

because the photographic practices observed in these settings operated independently of the photographer's direct control and took place before the emergence of the final image. The study focused specifically on latent processes typically considered insignificant or deviant in traditional photographic practices. For instance, the film rebate—usually discarded as a 'non-image'—was re-examined for its aesthetic potential. This investigation into incidental moments within photographic production ultimately led to the identification of three aesthetic events embedded in the C-type printing process: tensioning, tearing, and fogging. These operations emerged as the primary focus of this practice research.

I undertook this inquiry in an anglophone academic setting because PhD level artistic research is not yet supported in German-speaking art schools such as Bern University of the Arts. As the UK is one of the European leaders in practice-based artistic research, I decided to relocate with my family to the United Kingdom to pursue this PhD. While this facilitated excellent long-term research collaboration (2018–2024) at Nottingham Trent University, the occasional Germanic sentence structure may prove challenging for the reader.

## **Research process**

The project developed through two interconnected phases: fieldwork and experimental aesthetic practice. The objective of the fieldwork element was to gain an insight into the less studied everyday practices of photographic production by immersing myself in commercial production settings. The process began in the two photographic laboratories (Bayeux London and Nottingham's Make it Easy Lab), affording access to material practices involving paper, film, printers, chemicals, scanners, image technicians, printing, framing, film processing, mounting, and cutting. The two other field partners were manufacturers of photographic materials:

Polaroid Enschede and Fujifilm. In these settings, I was afforded opportunities to shadow image technicians and laboratory professionals, collect artefacts, and make image and sound recordings.

Some of the aesthetic moments I encountered during fieldwork defied description or capture by traditional representational means. While the material I collected was significant, any attempt to use it as evidence would fail to capture its vibrancy and subtlety. Drawing on Bolt (2016) and Azoulay (2010), the concept of an *aesthetic event* – referring to moments of profound sensory engagement beyond the purely visual or representational – guided the development of an event-centric methodology.

The identification of three aesthetic events – tensioning, tearing, and fogging –during C-type printing at Bayeux highlighted the limitations of conventional methods (e.g. photographs, interviews) for conveying the subtle, invisible, and transient qualities of photographic making. The difficulty of capturing these complex affective experiences raised several critical questions. How can such experiences be documented? How can the delicate melodic dissonance of tearing be conveyed? What methods might facilitate multisensorial engagement with tensioning, tearing, and fogging beyond the focus on the final photograph in commercial laboratory settings? To address these questions, I investigated the three operations in greater depth in an attempt to disclose their aesthetic qualities.

In the second phase of the research, I developed a ‘bricolage’ approach incorporating experimental aesthetic practice based on non-representational methods to complement the fieldwork. This included methods like Visual Thinking Strategies (VTS) and Deep Listening, as well as artwork production and critical writing to capture and convey relevant insights. The aim of this phase was to bring the methods

of the artist's studio to bear on the materialised artefacts and productive conditions generated in a processual mode of practice. Studio-based exploratory sessions like 'Tearing Paper,' 'Touching Acts,' 'Deep Listening with Tearing,' and 'VTS and Light Kissing' built on the initial fieldwork insights to develop fuller engagement and understanding of these operations beyond their functional confines.

In combination with the multifaceted sensory fieldwork, these sessions informed the development of a portfolio of artworks incorporating moving image, multimedia, and sound elements. This approach acknowledges that verbal descriptions relate primarily to the visual sense; to demonstrate how darkness can enhance the auditory and tactile senses, I devised a video essay entitled 'Too Loose, Too Tight, and Just Right' (Jaeger 2021). Throughout this piece, a black screen was accompanied by machine sounds while conversational prose scrolled across the screen. The viewer encountered a unique sensory dilemma: they could not see the source of the sounds they hear or connect visually with the narrative. This deliberate disconnection foregrounded the complex sensory experiences associated with photographic making.

To convey these insights, I developed a multimodal presentation strategy that combined critical writing in the form of a written exegesis with artwork performance. Staged in exhibition format on the Research Catalogue, *The Aesthetics of Photographic Production* incorporates process insights from both phases of the research. This three-part presentation strategy leverages aesthetic and linguistic means – showing and telling – to illuminate the multisensory and material complexities of photographic making.

## **Organisation of the research submission**

As well as this written exegesis, the thesis includes a body of artworks and a digital portfolio of process constellations, both of which are showcased on the Research Catalogue exposition. This combination of 'showing' (artworks and digital portfolio) and 'telling' (written exegesis) articulates the findings and invites a direct encounter.

### **Artworks**

The exhibition staged for the purposes of the viva voce defence directs the examiners' attention to the more-than-visual aspects of photographic making, where from the body of seven artworks produced over the course of this research, four were chosen as research outputs: 'Too loose, too tight and just right' (Jaeger 2021); 'Light Kissing' (Jaeger 2022); the soundscape 'a rip, a tear, a violence, a tenderness' (Jaeger 2022); and the sculptural installation 'Material Tiffs' (Jaeger 2021). All the artworks are discussed in Chapter 3 and a selection can be accessed on the Research Catalogue exposition by following the link provided in each case.

### **Digital portfolio**

*The Aesthetics of Photographic Production* (Jaeger 2024) was developed as an exposition on the Research Catalogue (RC). The RC is a leading non-profit open access rich media platform for presenting artistic research. This novel method of disseminating research findings moves beyond conventional linear narratives to facilitate dynamic exploration (Schwab 2012). The platform facilitates engagement with insights beyond the linearity of the written exegesis.

The exposition showcases image and sound recordings, artwork documentation, and process insights associated with the present research. Visitors are invited to browse the exposition at their leisure and along a route of their own choosing. At various

points, the written exegesis links to specific resources on the RC exposition, and readers are encouraged to follow these links to engage with the content as suggested.

### **Written exegesis**

The written exegesis comprises four chapters. Chapter 1 (Background and Context) situates the study within the wider photography literature to frame the research questions. Chapter 2 (Methodologies and Methods) details the gradual evolution of the innovative methodology and presentation approach. Chapter 3 presents the research findings in three parts and includes hypertext links that allow the reader to engage with the Research Catalogue material at the appropriate points. Finally, Chapter 4 (Conclusion) discusses the study's contributions and limitations, as well as my future research plans.

As the study's title suggests, this multisensorial event-centric perspective on the processes of photographic making will be of interest to scholars and practitioners in the fields of photography, art, and material culture. By moving beyond the photograph and its interpretation to embrace the sensory and material complexities of making, the findings enrich and extend existing conceptual and empirical accounts of photographic practice.



# Chapter 1 Background and Context

## Re-evaluating Photographic Practice

### Introduction

This first chapter lays the groundwork for a re-evaluation of photographic practice by questioning traditional interpretations. Articulating the historical and theoretical context for the research questions, the chapter highlights the need for a shift of emphasis from the photograph to photographic practice, drawing on Wells' (2008) inquiry into photography as a twenty-first century study object and the dilemma raised by Kriebel (2007): whether to theorise the photograph or photographic practice itself. Victor Burgin favours a theoretical focus on the photograph, he simultaneously acknowledges that this approach may overshadow the 'latent practices' underlying photographic work (1982, 1984). This sentiment resonates with Barthes' *Camera Lucida* (1984), which, despite its analytical acumen, admits to an experiential gap in our understanding of the practices of photographic making.

The present critical evaluation of a prevailing discourse that largely equates photography with the output of images (as discussed, for instance, by Kriebel 2007) reveals a significant oversight in the understanding of what constitutes photographic practice. This deficit informed the two primary research objectives: to analyse the aesthetic output of photographic production beyond the photograph, and to explore the broader implications for the conceptualisation of photographic practice. The present exploration of materialisation processes in photographic practice builds on the theoretical work of several contemporary thinkers. Echoing Tierney and Sallee (2008), Karen Barad (2003, 2007, 2012) and Judith Butler (2011) emphasized the interplay between 'making' (poiesis) and 'doing' (praxis) and challenged the traditional binary separation of these concepts. In line with

Rubinstein's post-human perspective on twenty-first century photography, the present exposition moves away from the photograph and the human subject – and in particular, the photographer as reference point – to expose and explore the practices of photographic making in commercial production settings. This broader analytical scope encompasses the operations, materials, and apparatus that constitute photographic practice as a framework for exploring the associated 'making and doing', paving the way for the subsequent methodological discussion of how to address these complex dynamics through rigorous and expansive research.

### **Re-evaluating photographic discourse**

To begin, this critical re-evaluation of photographic discourse situates the present research within the ongoing discussion of contemporary photography's defining characteristics. Challenging the prevailing focus on the photographic image, it advocates exploration of the material processes that underpin photographic practice but are often overlooked. Underscoring the breadth and complexity of contemporary photography, Liz Wells, Professor of Photographic Culture (University of Plymouth), contends that the proliferation of diverse photographic forms has significantly expanded the field. This invites a reassessment of how photography is conceptualised and practised – a central theme of the present chapter. In tandem with Wells' insights, the peer-reviewed online journal *photographies* marks a pivotal shift, acknowledging that photography is a truly expanded field, in which deep continuities coexist alongside unforeseen and radical transformations (Wells and Bate 2008).

In redefining the scope of photography, this shift presents new challenges. Indeed, the advent of digital imaging and network technologies has so fully engaged photography's critical apparatus that the discipline has often lost sight of its own developmental trajectory (Wells and Bate 2008). As co-founders of *photographies* in 2008, Liz Wells and David Bate

identified and addressed this lack of contextualisation of photography's expanded contemporary field.<sup>2</sup> The journal's title clearly (and refreshingly) distances it from the monolithic account of photography and its classical ontological grounding in identity. Against this monolithic view, the journal's opening editorial statement asserts that '*Photographies* seeks to construct a new agenda for theorising photography as a heterogeneous medium ...The title is intended to recognise both this openness in approach and the inevitable questions about how we constitute "photography" as an object of study in the twenty-first century' (Wells and Bate 2008, p. 1).

This question of how photography should be conceptualised as a subject of study in the twenty-first century raises further issues regarding the traditional focus of study. As Kriebel asked, 'Is it the object – the photograph – that we theorise, or is it photographic practice? Or do we theorise their function?' (2007, p. 5). The British photographer and critic Victor Burgin suggests it is 'reasonable to assume that the object of photography theory is, at base, a photograph' (Burgin 1984, p. 61). The ongoing debate about 'what photography is' consistently aligns with the question 'What is a photograph?' (Azoulay 2010; Elkins 2011; Squiers 2014) but seldom addresses the question 'What is photographic practice?'.

### **What is photographic practice?**

An agreed definition of contemporary photographic practice has proved elusive despite the contributions of major works like *Photography: A Critical Introduction* (Wells 2015), *Photography* (Bate 2016), *What Photography Is* (Elkins 2011), *Behind the Image: Research in Photography* (Caruana and Fox 2020) and *Reframing Photography: Theory and Practice* (Modrak and Anthes 2011). However, Burgin (1982) explicitly notes the interdependence of

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<sup>2</sup> The journal *photographies* is published by Taylor & Francis (three issues per year).

image and practice, where the latter is seen to be contingent upon and subordinate to the former.

*Photographic practice is currently quite arbitrarily based on an ideology of the image [...] In fact, the technical means of photography readily offer a plurality of images. The image, therefore, represents a contingent repression of latent practices: it is in this that it is ideological. To counterbalance the overwhelming focus on the 'indivisible' image, we might do well to consider the role of montage in the photographic production of meaning (1982, p. 67).*

Here, Burgin applies semiotic concepts to practical criticism, focusing primarily on the photographic image. However, he also mentions 'latent practices' and, in particular, the role of practice in the montage of photographic meaning-making. To date, these insights have remained largely undeveloped by Burgin or anyone else; although frequently referenced, there is no detailed account of contemporary photographic practice, and the term lacks precision. Turning instead to Borgdorff's definition of art practice as both object and creative process (praxis) (2012, p. 53), one might extend this interpretation to photographic practice as an intertwining of object and praxis. In this vein, I contend that the prevailing emphasis on the photograph overlooks the importance of praxis as a co-constitutive dimension. Notably, although highly regarded, comprehensive, and frequently cited, the sixth edition of Wells' *Photography: A Critical Introduction* (2015) does not elaborate on terms like 'practice' or 'photographic practice', and the index makes no reference to terms like 'photography as practice' or 'photography as research'. Pinney's critique usefully summarises the significance of this oversight.

*Under the influence of theorists like Sontag and John Tagg, much writing on photography has focused on the ideological effects of picture-taking, losing sight of the dialogic space that often emerges during the process of picture making. This*

*focus on the political consequences of photography has effectively obscured any engagement with its actual practice* (Pinney 2003, p. 14).

While Wells and Bate distance themselves from the classical ontological grounding of photography, it is left to Darren Newbury (2009) to acknowledge the diversity of photographic practices: 'Of course, there is no single practice of photography; rather, there are multiple practices' (2009, p. 117).

Aside from the lack of an agreed definition, how is the term 'photographic practice' treated in the existing literature? As both critic and artist, Burgin does address the issue of practice in photography research, alongside art historians, curators, critics, and academics such as Elkins, Wells, Bate, Batchen, and Krauss. Photographic practice is often approached with sufficient theoretical distance to facilitate conclusions *about it*. Borgdorff characterises *research about the arts* as a matter of 'reflection' and 'interpretation', encompassing reconstructive, deconstructive, descriptive, or explanatory methodologies that are historical and hermeneutic, philosophical and aesthetic, or critical and analytic.<sup>3</sup> In short, research about the arts often examines art practice from a theoretical distance, drawing conclusions through interpretation.

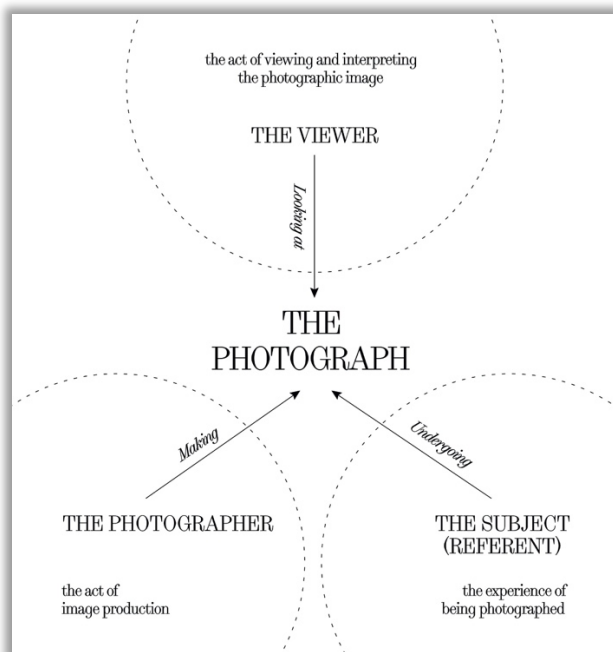
Although Burgin's critical stance shares the tendency to focus primarily on the image produced, he acknowledges that this may obscure the 'latent practices' that underpin photographic work (Burgin 1982, 1984). In *Camera Lucida*, Barthes (1984, p. 9) also places the photograph at the heart of photographic practice but situates it within a triadic relationship involving *making*, *undergoing*, and *looking* (see Fig. 4). Each of these practices is linked to a human subject: 'The Photographer' to 'making' or the act of image production;

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<sup>3</sup> Borgdorff's account of the terminology is considered thorough. He explicitly draws attention to the fact that even the most common terms such as 'practice-based research', 'practice-led research', 'practice as research' and 'artistic research' do not exhaustively describe the possible forms of artistic research: 'After all, isn't one distinctive characteristic of the arts, and hence too of the research tied up with it, their very ability to elude strict classifications and demarcations, and to actually generate the criteria—in each individual art project and every time again and again—which the research is to satisfy, both in the methodological sense and in the ways, the research is explained and documented?' (2012, pp. 38–39).

‘The Photographed Subject (Referent)’ to ‘undergoing’ or the experience of being photographed; and ‘The Viewer’ to ‘looking’ or the act of viewing and interpreting the photographic image. In exploring the practice of making, Barthes acknowledges an experiential gap, as he is not a photographer. Yet, despite this acknowledgement and Burgin’s critique of the indivisible image concept, these ‘latent practices’ have not been studied in detail.

Similarly, Wells acknowledges that conceptual issues related to ways of thinking about photographs and photography are framed in terms of reading rather than making (Wells 2015, p. 3). It is perhaps unsurprising, then, that there is little theoretical debate about the practices of making. Instead, authors typically detail the individual practices of established photographers like Rineke Dijkstra, Wolfgang Tillmans, and Jeff Wall (Blessing and Phillips 2012, Dufour 2022, Tillmans and Eichler 2011) or on practical theory on how-to procedures for practitioner (Adams 1948; Modrak and Anthes 2011). This excessive focus on ‘What is a photograph?’ overshadows the equally important question of ‘What is photographic practice?’, reflecting a significant scholarly gap.



**Fig. 4: Barthes' triadic conception of photographic practice (Graphic by Andrea Jaeger).**

A preliminary review of the term 'photographic practice' in Bate (2016), Batchen (1990), Burgin (1982), Elkins (2011), and Wells (2015) reveals a generally discursive approach to practice. In other words, by critically contextualising and interpreting photographic writings, images, practices, and functions, the photographic image is reduced to a matter of language. The present research addresses the limitations of these common interpretive accounts (which are primarily linguistic in form) as they relate to constituted photographic practice.

Studies of material culture acknowledge the limitations of reconstituting the operations of discursive practices as critical interpretations. For example, Orlikowski and Scott (2015) argued that significant losses are incurred in translating an artefact – as materialisation or practice – from the multifactorial and largely inarticulate realm of sensory experience to a two-dimensional scholarly text or as an exhibit in the sterile 'white wall' environment of a gallery. Critiquing this approach for its narrow focus on the discursive and its questionable connection to the material world, they stressed the need for researchers to engage actively with their subjects, moving beyond mere external representations to foster a more profound interaction with the material in question.

In studies of discourse and materiality, there is an emerging emphasis on 'going directly to the source' and approaching materiality 'in action' or 'in situ'. This critical empiricism examines the terms on which discursive reality is materialised and produced; for instance, Buchli (2002) insisted on the significance of the processes of materialisation as the object of study.

*In a sense, looking at what happens before and after the artefact is more significant than the artefact itself; that is, the terms of materiality rather than material culture itself and the differential ability of individuals to participate in these processes. (2002, p. 19)*

Karen Barad (2007) criticised the Foucauldian conception of discourse for failing to address the material dimension of discursive practices. Instead, she proposed a performative understanding of discourse and materiality as entangled and inseparable – an intra-activity of mattering produced-in-practice.<sup>4</sup> On this view, discursive practices are not merely human-based activities but specific material reconfigurations of the world through which boundaries, properties, and meanings are differentially enacted (Barad 2003, p. 828).

Barad focuses on the performative act of practice as engagement with the constitutive processes of materialisation to explore how discourse is materially enacted in practice. This approach advocates a form of research that foregrounds practice, resisting the traditional separation of subject and object, theory and practice, or researcher and practitioner. Instead, practice – in the present context, photographic practice – subjects itself to scrutiny; by exploring these processes ‘in situ’, this approach emphasises the nature of practice as performative act. Focusing on the processes of materialisation rather than on that which is materialised promotes a different view of matter – not as a fixed essence but as the substance of intra-active becoming; not a mere thing, but a doing, a congealing of agency (Barad 2007, pp. 183–184). The idea that matter is actively involved in the world’s becoming resonates with Judith Butler’s (2011) idea of matter – not as a site or surface but as a process of materialisation that stabilises over time to produce the effect of boundary, fixity, and surface called ‘matter’.

A performative approach to practice, then, concentrates on the processes of materialisation in material-discursive practices that involve active doing and making. In this model, the

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<sup>4</sup> Barad coined the term ‘intra-action’ to overcome the metaphysics of individualism that underpins conventional understandings of ‘interactions’, elaborating the neologism as follows: “‘Intra-action’ signifies the mutual constitution of entangled agencies [...] the notion of intra-action recognises that distinct agencies do not precede, but rather emerge through their intra-action [...] [and, AJ] distinct agencies are only distinct in a relational, not an absolute, sense, that is, agencies are only distinct in relation to their mutual entanglement; they don’t exist as individual elements’ (2007, p. 33).



researcher is also a practitioner, engaging directly to investigate both factual and non-factual elements and their becoming from within. Borgdorff's perspective on the non-factual underscores this point: 'All facts are also made, and are not merely given – they are facta, not data – and the making also involves the non-factual' (2012, p. 46). Through immersion in and alignment with the practices being performed, this 'view from within' can move beyond an external perspective confined to materialised forms, present or realised. Instead, one gains access to the heterogeneous making and doing of Burgin's 'latent practices'.

Returning to Wells' query about photography as an object of study in the twenty-first century, the present study addresses the issue by exploring materialisation as making and doing in photographic practice. By framing photographic practice as an entanglement of object and praxis, it can be argued that the prevailing emphasis on the photograph neglects the role of praxis as a co-constitutive dimension encompassing doing and making in the ongoing and open-ended course of materialisation. Drawing on Aristotle's foundational distinction between 'making' (poiesis) as goal-oriented action and 'doing' (praxis) as an end in itself (Tierney and Sallee, 2008), the present research challenges the traditional binary separation of these concepts and advocates a more integrated view of 'making' and 'doing' as dynamically interwoven. On this view, photographic making is understood as the production of materialisations, and doing as the productive conditions (which may or may not lead to tangible results).

In line with Rubinstein's understanding of twenty-first century photography as an immersive economy that supports an entirely new way of interacting with materiality and its relationship to bodies, machines, and brains (2016, p. 158), this project explores the materials, operations, and apparatus that together constitute a photograph. This approach renders the photograph less central and moves away from human subjects (notably the photographer as reference point for the practices of photographic making) to expose and explore

photograph-generating practices in commercial production settings.<sup>5</sup> To that end, the project at hand addressed the following research objectives.

Objective 1: *To critically analyse what else besides the photograph is aesthetically made in photographic production.*

Objective 2: *To explore the implications for the concept of photographic practice.*

Extending beyond the human-centred relationship with the photograph as the prevailing focus of photographic theory, both of these objectives are methodologically and conceptually grounded in new materialism, post-human photography, and sensorial aesthetics. The overarching aim was to explore the post-human, materialist, and multisensorial aspects of relations with photographic matter. The approach was openly explorative and speculative, adopting the artist-researcher stance to attune to the processes, practices, and products of photographic making and doing.

This brief review confirms that the photograph remains the central object of study in European photographic discourse. Looking through the lens of Barthes' *Camera Lucida* (1984), it becomes clear that this has ontological implications, placing the human – the photographer, the spectator, and the photographed – at the centre. In these circumstances, the ongoing debate about 'what photography is' typically centres on the question '*What is a photograph?*' (Azoulay 2010, Elkins 2011, Squiers 2014), often at the expense of asking '*What is photographic practice?*' In the absence of any agreed or detailed account of contemporary photographic practice, the term remains imprecise and underexplored.

Critics including Victor Burgin (1982) and some others (e.g. Kriebel 2007) have noted the overwhelming academic emphasis on the photograph as object rather than the processes and practices of making. As well as limiting the breadth of photographic theory, that

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<sup>5</sup> As used repeatedly by Liz Wells (e.g. 2015, p. 43), the relevant literature is commonly divided into 'production, publishing, and consumption'.

approach neglects the interactive and procedural dimensions of photographic practice. To counter these effects, the present project shifted the focus to investigate the processes of materialisation in photographic practice. Integrating and expanding on the theoretical work of thinkers like Karen Barad (2003, 2007, 2012) and Judith Butler (2011), the present research illuminates the dynamic interplay between 'making' (poiesis) and 'doing' (praxis) as discussed by Tierney and Sallee (2008).

## Chapter 2 Methodologies and Methods

### Integrating Experimental Aesthetics and Sensory Exploration: A Multimodal Methodology for Photography Research

#### Introduction

The methodology that anchors this research was designed to explore the aesthetic dimensions of photographic production beyond the conventional confines of the photograph itself. In this chapter, the **Introduction to the Methodology** section outlines how the present research traversed the sensory and material landscapes of photographic practice by moving away from a purely visual approach to incorporate post-human, more-than-representational, and experimental artistic research methods.

The **Conceptual Framework** section elaborates the intellectual grounding of this methodological transition, highlighting the value of an event-centric approach that acknowledges the roles of both human and non-human actors in photographic production. Non-representational theories and post-humanist thought enrich the comprehension of photographic practices by situating them in an expanded aesthetic, material, and sensory context.

The **Research Design and Approach** section articulates the combination of empirical research with artistic research as bricolage, and a multimodal presentation strategy, underpinned by ethical considerations. The bricolage approach combined sensory fieldwork with experimental aesthetics to garner detailed insights into diverse photographic production settings. Covering the methods employed, challenges encountered, and the principles of experimental aesthetic practice, this section details the use of explorative study sessions and artwork production.

Finally, the **Multimodal Presentation Strategy** section highlights the importance of both showing and telling to communicate the multisensory and material complexities of photographic practice. The concluding remarks reflect on the project's limitations and challenges and adjustments to the research design, as well as its methodological contributions and implications for future research.

## **Introduction to the Methodology**

To explore what is aesthetically produced in photographic production beyond the photograph and how this impacts the concept of photographic practice, the present research employed a post-human, more-than-representational, experimental artistic approach. The aim was to expand conceptions of photographic practice by considering its material and sensory underpinnings and challenging the conventional emphasis on the photograph as visual output in scholarship and practice. Led by a practitioner-researcher, the bricolage approach combined sensory fieldwork and experimental aesthetic practice to expose the less visible nuances and ephemeral dimensions of photographic making.

This practice-based event-centric rationale was informed by a sense of the rich multisensory and material complexities of photographic production that traditional representational methodologies often overlook. Brad Haseman (2006) noted the value of practice-based research as a means of foregrounding experiential knowledge and embodied practices in artistic inquiry. By adopting the role of practitioner-researcher – a term coined by Robin Nelson (2013, pp. 23–47) – I was able to investigate the tactile, auditory, and ephemeral aspects of photographic making. Linda Candy (2006, p. 1) defined practice-based research as ‘an original investigation undertaken in order to gain new knowledge partly by means of practice and the outcomes of that practice’. Driven by theoretical questions and concerns, Candy emphasised the importance of melding practice with rigorous scholarly inquiry to elicit novel insights and understandings.

A further reason for choosing the practice-based research approach was the need to move beyond visual-centric narratives towards an event-centric understanding of photographic practice that takes account of its sensory and material dimensions (Azoulay 2010) in line with Haseman (2006) and the theoretical underpinnings articulated by Candy (2006). Within this framework, one can analyse both the visual outcomes of photographic processes and their sensory and material aspects. This shift of emphasis marks a departure from traditional narratives that centre on the photograph as the primary outcome and focus of scholarly interest. Moving beyond that fixation on the final image demands immersive engagement with the processes of production, including the handling of materials and other sensory experiences. In foregrounding these neglected elements, the present research invites a broader aesthetic understanding that incorporates the tactile and auditory dimensions of making as discussed, for instance, by Edwards and Hart (2004), Plummer, Riches, and Wooldridge (2012), and Mackinnon (2016).

The artistic research approach was also informed by post-humanist ideas that challenge anthropocentric biases and advocate a more inclusive understanding of agency (Ferrando 2012, Vannini 2015, Bolt 2016). In combination with sensory fieldwork in photographic laboratories and explorative studio research sessions, this facilitated a nuanced exploration of photographic practice beyond the final image and its relation to the photographer, the photographed subject, or the reader. Care was taken to ensure that the research remained reflective and responsible, respecting the ethical implications of engaging with both human and non-human subjects (Shotwell, 2011).

In summary, the chosen methodology reflects a commitment to an exploratory and iterative process that remained open to the emergent paths of artistic research. This laid the groundwork for a journey that was as much about the process of inquiry as it was about the findings. As well as advancing academic discourse, the aim was to prompt a re-evaluation

of photographic practice itself by developing an event-centric framework to illuminate the aesthetic potential of the processes of photographic making.

## **Conceptual Framework**

To capture the sensory experiences, material interactions, and procedural dynamics of photographic making, the proposed conceptual framework addresses three key issues: 1) the shift from a purely visual analysis of the photograph to the sensory and material aspects of photographic practice; 2) an event-centric approach that captures aesthetic aspects of the photographic process; and 3) the role of more-than-human agency in photographic making.

1) The transition to a sensory and material-focused perspective marks a critical change of direction for photography studies by challenging the entrenched visual bias of the prevailing discourse and broadening its scope to encompass the tactile and auditory dimensions of photographic production. This reorientation echoes earlier work by Edwards and Hart (2004), who stressed the importance of sensory engagement in understanding photographs as material objects. Plummer, Riches, and Wooldridge (2012) elaborated further on the significance of tactile experiences and the inherent materiality of photography, contributing to the 'materialist turn' in contemporary discourse and practice. Their investigation highlighted photography's potential to exceed two-dimensional objecthood by reshaping perceptions of its physicality and tactile qualities. These perspectives invite more comprehensive investigation of the sensory and material complexities of photographic making.

2) At the core of this conceptual framework, an event-centric approach emphasises the significance of aesthetic events for a fuller understanding of photographic production. In the present context, moments of profound sensory engagement during fieldwork can be

characterised as aesthetic events that transcend the purely visual or representational aspects of these encounters.<sup>6</sup> Azoulay (2010) and Mackinnon (2016) insisted that photography should be conceptualised as an event, given its capacity to evoke a complex network of relations and interactions beyond the confines of the photograph itself. Embracing this idea of the aesthetic event, the present research contends that, beyond visual representation, photography can provoke visceral responses and immersive experiences. For present purposes, the term ‘aesthetic event’ is a foundational concept that guides exploration of the sensory and material dimensions of photographic making. During fieldwork, for instance, distinct aesthetic events during C-type printing led to the identification of three operations on photosensitive paper: tensioning, tearing, and fogging. It became clear that traditional methods such as participatory observation or visual documentation could not capture this sensual dimension, and these operations were further investigated as case examples. Using this event-centric approach, these inherent material and processual aspects of photographic making could be elucidated as latent aesthetic dimensions.

3) The role of more-than-human agency in photographic production is also a critical component of the present approach. This perspective challenges anthropocentric narratives by acknowledging the active participation of non-human elements such as materials and technologies in the photographic process. By considering the agency of these non-human actors, the framework accommodates the complex networks of relations and the material and technological affordances that shape photographic making, aligning with broader post-

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<sup>6</sup> In this regard, the present research draws on the ideas of Merleau-Ponty (1964) and Rancière (2009). In Rancière's seminal work *The Emancipated Spectator* (2009), he characterises the aesthetic event as a disruption of established perceptual norms – that is, when an artwork or performance challenges conventional understandings of visibility, audibility, or comprehensibility. Regarding the embodied experience of the aesthetic event, Merleau-Ponty (1964) viewed aesthetic encounters as a dynamic interplay between the perceiving subject and the perceived object. The aesthetic event arises from the fusion of bodily sensations, senses, and the external environment as a moment of heightened consciousness in which the distinctions between subject and object or self and other become blurred, inviting novel ways of apprehending and engaging with the world.



humanist and new materialist methodologies that promote a more inclusive and interconnected view of the world, including Bennett (2010), Ferrando (2012), Vannini (2015), and Bolt (2016). In her renowned work *Vibrant Matter* (2010), political theorist Jane Bennett posits a 'vital materiality' that recognises the active participation of nonhuman forces in events that run through and across bodies, both human and nonhuman. This challenges conventional notions of agency and prompts reconsideration of the role of nonhuman agents in shaping human affairs. Similarly, philosopher Francesca Ferrando's (2012, 2013, 2019) work on post-humanism envisages an expansive understanding of agency that transcends anthropocentric boundaries and emphasises the need to acknowledge and include both human and non-human actors when conceptualising agency. Echoing these sentiments, ethnographer and filmmaker Philip Vannini (2015) adopted an everyday vantage to consider the active role played by material objects in shaping human experiences and practices. Finally, artist and theorist Barbara Bolt has contributed to this post-humanist shift by examining the entanglement of human and non-human agencies in the field of art (2013, 2016, 2019) and the complexity of agency in artistic practice. Together, these authors advance a nuanced understanding of more-than-human agency and its implications for various fields of human activity.

The proposed conceptual framework provides for the integration of non-representational and post-humanist methodologies in artistic research strategies to capture the full spectrum of experiences and interactions that define photographic practice. The shift of emphasis from the visual to the sensory and material dimensions of aesthetic events and the acknowledgement of more-than-human agency represent a radical re-evaluation of conventional photography studies and analysis.

## **Research design and approach**

The practice-based research methodology outlined above reflects a commitment to fuller intellectual and experiential engagement commercial photographic production. The three key components of the conceptual framework shaped the research design and the methodological rationale, incorporating artistic and empirical research as bricolage and a multimodal presentation strategy.

### ***Artistic research methodology***

The decision to employ an artistic research methodology reflects the need to move beyond the conventional separation of research and practice. As articulated by Henk Borgdorff (2012, pp. 37–39), an artistic research methodology rejects both the separation of subject and object, including any distance between the researcher and the research object. Accordingly, rather than focusing on the photographer, the present inquiry addressed the processes of photographic making beyond human practice and the aesthetic outcomes beyond the photograph itself. This practice-based research emphasised the knowledge embodied in processes and artifacts. As Candy (2006, p. 1) noted, this approach asserts its originality and contribution to knowledge in non-verbal outcomes and contexts like design, music, digital media, performance, and exhibitions. While words may signify and contextualise these claims, only direct engagement with the outcomes themselves can support comprehensive understanding. In this regard, the philosopher Dieter Mersch (2015) noted the importance of showing rather than telling in validating contributions to knowledge. Mersch characterised artistic practices as forms of cognition that exceed linguistic expression and cannot be fully captured by scientific discourse. Positing an aesthetic mode of cognition beyond the limitations of language and the ‘linguistic turn,’ he argued that artistic inquiry should be seen as a unique and indispensable form of knowledge production.

## ***Bricolage***

The multimethodological approach of bricolage in this study integrates post-human and more-than-representational perspectives with artistic inquiry, merging sensory fieldwork and experimental aesthetic practice. First conceptualised by Norman K. Denzin and Yvonna S. Lincoln (1994) and later expanded by Joe L. Kincheloe (2005), bricolage refers to a flexible research methodology marked by emergent design, adaptability, and methodological plurality. This approach supports a critical, multi-perspectival, multi-theoretical framework, drawing on diverse methods and theoretical perspectives to navigate the complexities of the subject matter. In my project, bricolage has shaped a responsive and evolving research design, enabling integration of empirical methods within commercial photographic settings with the exploratory methodologies of studio practice, thereby accommodating the technical, aesthetic, and more-than-human elements fundamental to photographic production. The choice of bricolage was particularly influenced by Kincheloe's (2005) emphasis on exploring processes, relationships, and interconnections rather than isolated phenomena. This process-oriented inquiry allowed an in-depth exploration of the sensory and aesthetic dimensions within the hidden and often overlooked practices embedded in everyday photographic production.

Sensory fieldwork in commercial environments was chosen as a promising entry point for examining these practices, given the possibility to engage directly with the sensory and material aspects of the photographic process. The rationale for the selection of production sites and field partners, as well as the methods used, is discussed in further detail below. Given the multi-layered nature of the bricolage approach, its key components are unpacked under the following sections: Sensory Fieldwork Research, Experimental Aesthetic Practice, and Ethical Considerations. This structure allows for a clearer understanding of how these elements interconnect within the broader framework of the study.

## ***Sensory Fieldwork Research***

To address the research objectives, professional photographic laboratories and manufacturers were identified as sites for sensory fieldwork. These settings were considered appropriate because they foregrounded the process of making rather than the conventional reference points of photographer and photograph.

## ***Fieldwork partners***

The initial research proposal was to collaborate with manufacturers of photographic materials, such as Hahnemühle in Dassel, Germany (one of the world's leading manufacturers of photographic paper for traditional and inkjet printing); Leica in Wetzlar, Germany (a leading manufacturer of high-end analogue and digital cameras); and Fujifilm in Tokyo, which still makes photographic film). However, it was subsequently decided to commence the fieldwork phase in laboratory settings, where the full range of photographic materials come together – paper, film, chemicals, scanners, printers, technicians, and processes like cutting and mounting. The fieldwork then moved on to photographic manufacturers to gain a deeper insight into the practices involved in the production of photographic materials. Between 2016 and 2019, fieldwork was conducted at two photographic laboratories (Bayeux London and Nottingham's Make it Easy Lab) and at two photographic factories (Polaroid Enschede and Fujifilm Tilburg) in the following chronological order.

Field day 1	Bayeux Ltd, London, UK, May 3, 2016
Field day 2	Bayeux Ltd, London, UK, May 13, 2016
Field day 3	Make it Easy Lab, Nottingham, UK, June 9, 2016
Field day 4	Make it Easy Lab, Nottingham, UK June 23, 2016
Field day 5	Bayeux Ltd, London, UK, June 30, 2016
Field day 6	Bayeux Ltd, London, UK, July 4, 2016
Field day 7	Make it Easy Lab, Nottingham, UK, September 22, 2016
Field day 8	Fujifilm, NL, Tilburg, September 6, 2018

Field day 9	Bayeux Ltd, London, UK, September 10, 2019
Field day 10	Bayeux Ltd, London, UK, September 17, 2019
Field day 11	Bayeux Ltd, London, UK, September 18, 2019
Field day 12	Bayeux Ltd, London, UK, September 26, 2019
Field day 13	Bayeux Ltd, London, UK, October 2, 2019
Field day 14	Polaroid, Enschede, NL, November 25, 2019
Field day 15	Polaroid, Enschede, NL, November 26, 2019
Field day 16	Polaroid, Enschede, NL, November 27, 2019
Field day 17	Polaroid, Enschede, NL, November 28, 2019
Field day 18	Polaroid, Enschede, NL, November 29, 2019

As a professional laboratory in the heart of London's West End, Bayeux was chosen because it offers the full range of digital and analogue photographic services. In the first iteration of fieldwork (four days in 2016), I was granted accompanied access to all production areas (Film Development, Mini-Lab, Drum Scanning, Large Format Printing and Retouche, Hand Printing, and Framing), and I was allowed to work alongside the technicians in each department. In the second iteration (five days in 2019), the Bayeux team by now knew me well, I was granted free access to the laboratory. Working alongside the image technicians, I wanted to learn more about the practices that had sparked my interest.

In the first iteration of fieldwork at Nottingham's community-centred Make it Easy Lab (between June 2016 and September 2016), I noted strong similarities with Bayeux's machine fleet (hard facts) and decisive differences (soft facts) in terms of the Nottingham lab's interior spatial layout, its peripheral location, its lower throughput (averaging 50 film rolls a week in contrast to Bayeux's 1,250), and its community-centred philosophy. These differences in layout, ethos, and culture afforded different experiences and encounters. The Nottingham lab was run by the owner, who acceded to my research request during our first phone call, along the lines of 'whenever is convenient for you'. As well as the owner's attitude, the lab's structures and layout created a sense of freedom and openness, and my

presence was considered a welcome diversion. My freedom of movement in this more relaxed environment allowed me to address questions more spontaneously, inviting extended conversation (in contrast to the shorter question-and-answer exchanges at Bayeux). The more relaxed throughput at Make it Easy Lab also meant that any process difficulties were perceived as challenges, while these were more often viewed as unwelcome interruptions at Bayeux London.

The second phase of fieldwork commenced in the Netherlands at Fujifilm Tilburg and the Polaroid factory in Enschede. Despite successfully negotiating access and funding for fieldwork at Hahnemühle Dassel in Germany, that collaboration was ultimately shelved because the Covid-19 pandemic made it impossible to travel. To explore how photographic paper ‘performs’ during production, I approached Fujifilm, the leading supplier of photographic paper, in 2017. A year later (September 6, 2018), I was invited to visit the company’s European headquarters in Tilburg to see how Fujifilm’s photographic paper is produced. There was a strict ‘no photography’ policy, but I was allowed to record the various sounds and background noises and to take notes. During my visit, I encountered a technician who talked about the imperfect deviations ‘that are ever so often not visible to an untrained eye’.<sup>7</sup> On completing the tour, I determined to deepen this collaboration through further field research in Fujifilm’s Control Department, but I was unable to negotiate further access.

My five-day visit to the Polaroid factory in Enschede (November 2019) proved more fruitful, as I was granted access to all the materials, machines, and technicians in the vast multi-storey setting. Over the course of five days, I was privileged to experience each stage of the manufacturing process at close quarters: paste production, podding, moulding, 8x10

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<sup>7</sup> See Fieldnote in relation to Fujifilm site visit.

production, and lab work. I also spent two days shadowing and conversing with production experts with more than 40 years' experience and observed the interplay of materials, machines, and workers around Assembly Machine 49. One can only appreciate the overwhelming power of this 10-ton moulding machine by standing next to it. The overwhelming smell heightens the senses as colossal pressures transform the crumb-sized granulate, melted into an ever so slightly bigger end-cap – a powerful rhythmic contraction with a heartbeat-like sound and feel. Any routine attempt to document the multisensory aesthetic of this production process would almost certainly fail to capture these simultaneous effects.

The next section details the methods employed during fieldwork and the limitations of representational methods like note-taking, photography, and recording for capturing the immersive rhythmic vibrations of the factory and the sounds of production. These sensations could only be experienced in situ through one's body. To address this issue, complementary non-representational methods were introduced by developing a bricolage research approach incorporating experimental aesthetic practice.

### **Fieldwork methods and limitations**

The commitment to sensory fieldwork aimed for maximum immersion in commercial settings to gain insights into the hidden everyday practices of photographic production. This approach followed the principles of sensory ethnography advocated by scholars like Sarah Pink (2015) and April Vannini and Philip Vannini (2023), who emphasise the importance of exploring smell, taste, touch, and vision as interconnected experiences. In the present context, this meant attuning to the processes of photographic production through heightened sensory awareness and embodied engagement as proposed by Myers (2017). Tapping into the aesthetic aspects of practice extends beyond the traditional understanding of aesthetics as a theory of art and beauty to the realm of sensorial aesthetics, as articulated

for instance by Bolt et al. (2007), emphasising attentiveness to sensation, affect, and the vitality of matter.

For the practitioner-researcher, the sensorial approach is subjective, active, and co-productive. Accordingly, my presence during fieldwork extended beyond observing photographic making as an onlooker or bystander. In these settings, I became part of the action through hands-on learning – touching, listening, questioning, and attending repeatedly to disruptions and outlier or cast-off events. To that end, I practised the following techniques:

- (1) hands-on practical learning;
- (2) making sound recordings, making snapshot images, and collecting by-products;
- (3) conversing about processes, paying particular attention to outliers and deviant cases;
- (4) waiting for unpredictable or unforeseeable events;
- (5) jotting down notes in real time about peculiarities and fragments of spoken interactions for subsequent analysis;
- (6) noting highlights, oddities, and follow-up questions in a fieldnote journal.

Fieldwork also involved shadowing the field partners' daily routines and practices. The technicians often explained their actions in master-apprentice fashion, helping me as practitioner-researcher to understand their processes and decisions, which in turn prompted further questions and inquiries. After an initial 'getting to know you' phase, my presence was seen as a welcome diversion from the everyday routine, which was typically described as 'boring', 'unspectacular', or 'not much to see'. My genuine interest in events that deviated from everyday routines and practices often led to conversations that helped to make sense of unpredictable events such as the fogging of photosensitive paper. As seeking permission to record such events would have disrupted the natural flow of conversation, any attempt to



capture them proved futile; the most significant moments were intensely felt but fleeting and could not be captured. While I successfully collected a wealth of materials during fieldwork, simply ‘using’ these materials as evidence would have failed to capture the vibrancy and softness they embodied. To convey this vibrancy, moments of profound sensory engagement that exceeded the purely visual or representational were characterised as aesthetic events. This event-centric approach to practice drew on ideas advanced by Bolt (2016) and Azoulay (2010).

The iterative fieldwork process across the different production sites identified three aesthetic events that shaped the subsequent methodology. The first of these events related to the operation of ‘*tearing*’ photographic paper as a tactile and audible material practice. This was the repeated act of separating the preferred photograph – ‘the one’ – from discarded prints and/or photographic paper cut and torn into pieces, which collected as debris in the waste bin (Fig. 5). The second aesthetic event related to the operation of ‘*cyan fogging*’, as a large-format LED printer shoots light unintentionally onto photographic paper, in more or less the same way, hour after hour (Fig. 6). The third of these aesthetic events involved the operation of ‘*tensioning*’ photosensitive paper during the printing process; this was done ‘in the dark’ and depended on touch, listening, and instinctive knowledge to find the ‘sweet spot’ (Fig. 7).



**Fig. 5: Aerial view: inside the paper bin.**



**Fig. 6: Cyan fogged artefact.**



**Fig. 7: Tensioning in action.**

While the fieldwork served to identify these three events as research objects, it proved challenging to grasp their aesthetic dimension. This limitation became apparent at Bayeux, where these operations were framed solely in terms of producing the optimal final image. To move beyond this preoccupation with the photograph, an open exploratory approach shifted the focus to the aesthetics of these three operations and what they ‘make’ – that is, the materialised artefacts or *makings* and the immaterial ephemeral *doings* generated at the processual level of practice. This further exploration can be characterised as *experimental aesthetic practice*.

### **Experimental Aesthetic Practice**

The integration of non-representational methodologies to compensate for the limitations of fieldwork led to the development of a bricolage approach to experimental aesthetic practice. In this second phase, the aesthetic event framework informed detailed case studies of tensioning, tearing, and fogging operations, as well as explorative study sessions based on methods like Visual Thinking Strategies (VTS) and Deep Listening, studio practice and critical writing to capture and convey the key findings. Specific examples of these multimodal artworks and process expositions are discussed in Chapter 3.

Rooted in the concepts of aesthetic thinking (Mersch 2015, Arteaga 2017) and experimental aesthetics (Rheinberger 2012), experimental aesthetic practice invites the practitioner-researcher to engage directly with ‘experimental systems’ rather than observing passively. Working with the dynamics of aesthetic events, one can challenge the status quo, disrupt common perceptions, and evoke new possibilities. Exploratory experimental workouts prompt the emergence of alternative responses and modes of engagement – in Arteaga’s words, ‘alternative means of approaching what we are doing and want or need to do’ (2017, p. 25). Transcending the conventional means-to-end research paradigm, this more-than-representational aesthetic approach incorporates the mixed modes of telling, showing, and

experiencing discussed by authors like Nigel Thrift (2008) and Philip Vannini (2015). Building on these conceptual foundations, the present research integrated artistic interventions that included explorative study sessions, artwork production, and critical writing to explore the operations of tearing, fogging, and tensioning in greater depth.

Based on the initial fieldwork insights, I devised several studio-based study sessions for further aesthetic exploration. Situated in a studio environment, these sessions prompted a more immersive understanding of each operation beyond the functional confines of producing photographs. This strategy was informed by the striking contrast between the actual laboratory process of photographic making and the retrospective explanations offered by the image technicians. For instance, the practice of tensioning involved delicate touches and attention to soft sounds in complete darkness. However, further attempts to explore tensioning involved listening to an image technician's instructions with the lights on, in stark contrast to the tactile and auditory experience of performing the operation in the dark. This discrepancy was profoundly illuminating and prompted me to situate further exploration beyond the confines of the commercial photographic laboratory.

The term *study session* was intentionally chosen over alternatives such as *workshop* or *participatory performance* to emphasise an open-ended, exploratory process, distinct from the skill acquisition often implied by workshops or the audience-oriented focus associated with participatory performance. This term is deeply rooted in the project's intention to create an explorative environment—one where participants were encouraged to engage freely, without the pressure of performative expectations or specific outcomes.<sup>8</sup> To that end, I devised four experimental studio-led study sessions: *Touching*

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<sup>8</sup> Drawing on the term's etymology, *study* carries layered connotations, particularly from the Latin *Studium*, meaning 'to be eager' or 'to apply oneself' (Barnhart, 1988, p. 1079). This connects it to the *studio* as a space of inquiry and making. This resonance supports the concept of study sessions as micro-laboratories, or 'aesthetic laboratories,' where participants engage in sensory and aesthetic investigations. Unlike a photographic laboratory in a commercial context, these study sessions served as intimate environments for exploratory and sensory engagement with practices that remained open to interpretation.

*Acts*, *Tearing Paper*, *Deep Listening with Tearing*, and *VTS with Light Kissing*. These sessions are described below and discussed in further detail in the Findings chapter.

I co-designed *Touching Acts* with creative writer-researcher Victoria Zoe Callus to explore the materialisation of the different feelings and sensations experienced when touching and listening to photographic paper during tensioning. The scheduled study session (21 May 2021, 14.30–17.00) formed part of NTU's DREAM seminar series. As session facilitators, Callus and I invited arts and design practitioners to engage hands-on and playfully, touching, stroking, and folding photographic paper according to preset scores for an extended period of time. For this online workshop, 12 invited participants accessed the password-protected safe space from their own home or studio, ensuring accessibility and inclusivity. If they wished, participants could receive an activity pack well in advance of the workshop, or they could provide the necessary materials themselves. As this experimental research-driven workshop formed part of our respective PhD projects, it was audio- and video-recorded with the participants' consent, and all data were anonymised.



Fig. 8: Digital portfolio of *Touching Acts*.

The rationale for the experimental study session *Tearing Paper* was to afford opportunities to feel, listen, and immerse oneself bodily in the act of tearing photographic paper as a tangible form of aesthetic making and doing. The experiment was designed as a solitary and uninterrupted activity in an enclosed space. Seven individuals participated in Tearing Paper during the scheduled period (July 2–13 2018). The encounter lasted as long as each participant wished, and they were free to move and act as they pleased. If they consented, their actions were audio-recorded; this method was considered less invasive than video recording or participant observation. The open-ended experimental format and talk-in-interaction helped to foreground the sensuous and material dimensions, and the participants were invited to respond to the experience during the encounter and immediately afterwards in an unstructured interview. All of the participants in these study sessions had a background in fine arts and design and were involved in the Summer Lodge Residency programme run by NTU's Fine Art Department.

To analyse the data from *Tearing Paper*, I examined the outputs and transcribed the participants' commentaries during and after each study session. The analysis proved challenging, as the aesthetic dimension of non-human to human interactions in this practice-led research process were not easily documented. To elucidate the aesthetic significance of the material, I devised the hour-long study-as-listening-session *Deep Listening with Tearing*, which focused on one of the seven audio recordings from *Tearing Paper*. The session took place on November 23, 2018, during the NTU Research Encounters seminar on Artistic Methodologies. The eight participants came from fine arts or design backgrounds. In a group setting, they engaged in deep listening by attending closely to the recorded sounds of paper tearing and the movements of bodies, paper, and other elements, and jotted down their thoughts while listening or immediately afterwards. This *deep listening* practice can heighten sensory awareness and establish a deeper connection with the sounds in question. As part of the present research, I participated in Deep Listening®

Intensive training; drawing on Pauline Oliveros' concept of *deep listening* (Oliveros, 2020), this programme enriched my understanding of listening as an embodied practice.

Both study sessions are analysed in the Findings chapter as part of the case study on tearing. Transcending traditional techniques of visual analysis, these experimental interventions were designed to capture the rich multisensory experiences and the intricate tactile and auditory processes associated with tearing photographic paper. This broader understanding of aesthetic making/s in C-type printing beyond the pursuit of the optimal final image paves the way for a more-than-visual understanding of photographic practice.

The final explorative study session, *VTS and Light Kissing*, was driven by my curiosity about the treatment of cyan-fogged artefacts, especially when stripped of the meanings assigned to them by laboratory image technicians, who viewed them as accidental and undesired cast-offs. The session focused on one of seven exhibited pieces from the artwork *Light Kissing* (Jaeger 2022). As a qualified Visual Thinking Strategies (VTS)<sup>9</sup> facilitator following training during my PhD research,<sup>10</sup> I was eager to elicit a multi-perspectivist reading of the artefact, which VTS promotes by deliberately stripping visual content of any context to openly explore '*what is going on in the image*' in a group setting<sup>11</sup> – in this case, '*what is going on in this cyan-fogged artefact*'. The session was run by the VTS Look and Listen Club – a monthly community group I had led since 2021 – as a programmed event at Backlit,

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<sup>9</sup> This method was developed in the 1980s by Philip Yenawine (then Director of Education at the Museum of Modern Art in New York) and Abigail Houston (Professor of Art Education and Director of the Graduate Program at Massachusetts College of Art) in response to the negative findings of a MOMA study which revealed that the Museum's Art Education programme was failing to reach its audience. The VTS method aims to foster the growth of creative and critical thinking skills and aesthetic understanding. See also <https://vtshome.org/about>.

<sup>10</sup> I successfully completed the VTS Beginning Practicum in June 2019 and the VTS Advanced Practicum in May 2021.

<sup>11</sup> Posing the question '*What is going on in this picture?*', VTS invites the audience to look at an artwork in silence for some minutes before engaging in collective critical analysis. No additional information or context (artist, title, etc.) is provided until the end of the session. The trained VTS facilitator's task is to link ideas, paraphrase participants' comments, and frame their views in a non-judgmental way. Paraphrasing slows the discussion down, promoting active listening and engagement with the work. Meaning is collectively produced through attentive observation, deep listening and visual thinking.

a Nottingham gallery, on September 7, 2022. Eight members of the group attended; to ensure that everyone felt supported in a safe space – one of the group’s core values – I refrained from audio-recording the session and took notes instead.

### **Multimodal Presentation Strategy**

The combined insights from the experimental study sessions and the multifaceted sensory fieldwork informed the production of the following seven artworks (moving image, multimedia, and sound installations), which were produced over the course of this project.

- *Groundless Belonging* (Andrea Jaeger 2020): Multimedia installation comprising four wooden blocks and printed triptychs.
- *Deep Matter* (Andrea Jaeger 2021): Multimedia installation comprising three bookstands, each holding a ream of 500 paper sheets and a risograph-printed photographic image.
- *Too loose, too tight, and just right* (Andrea Jaeger 2021): Projection of the video essay *Duration* (12 min 22 sec).
- *Material Tiffs* (Andrea Jaeger 2021): Site-specific installation of standing photographic prints of seven texture maps.
- *a rip, a tear, a violence, a tenderness* (Andrea Jaeger and Tom Harris 2022): Sound installation featuring recorded fragments of tearing sounds.
- *Touched and Listened with (leader and tails)* (Andrea Jaeger 2022): Photographic paper strips and poster rail.
- *Light Kissing* (Andrea Jaeger 2022): Site-specific multimedia installation of eight cyan fogged paper strips and acrylic batten.

I chose to produce artworks to show the research insights – especially those involving complex sensorial qualities – because linguistic descriptions tend to favour the visual at the expense of other subtler effects. For instance, to demonstrate how darkness can enhance

auditory and tactile sensations, I produced the video essay *Too loose, too tight, and just right* (Jaeger 2021). Throughout this piece, a black screen is accompanied by the sounds of machinery. Conversational prose describing the process scrolls across the screen, presenting the viewer with a unique sensory dilemma; they cannot see the source of the sounds, nor can they connect visually with the narrative. In engaging with the work, this deliberate disconnection foregrounds the complexity of sensory experience in photographic making.

The exhibition staged for the *viva voce* defence of this PhD project was designed to immerse the audience in the research findings, shifting the focus from the prevailing photograph-centricity of such studies towards the more-than-visual aspects of photographic making. To challenge the dominant visual paradigm, the research design combines critical writing with artwork production. This combination of showing and telling as co-contributors to knowledge leverages both aesthetic and linguistic means to propose an expanded understanding of photographic practice. The multimodal presentation strategy described below is a logical extension of this rationale.

To foster a deeper connection with the multisensory and material intricacies of photographic production beyond its representational function, the Research Catalogue, a non-profit international database, was chosen to present key insights from the fieldwork and experimental aesthetic practice. The Research Catalogue is the leading open-access online platform for rich media presentations of artistic research. Its novel approach facilitates the dissemination of research findings through dynamic and comprehensive forms of exposition beyond conventional linear narrative (Schwab 2012). This multimodal presentation of artworks and processes helped to amplify the study's non-verbal insights into the complex operations of photographic making.



The digital portfolio *The Aesthetics of Photographic Production* comprises a *Welcome* page, and four *Insight* pages. The Welcome page introduces the user to tensioning, fogging, and tearing. A close-up of my hands *shows* these operations supported by *telling* (voice and text on index cards). The *Welcome* page links to four web spaces presenting *Fieldwork* and process insights for each of the three case examples, tensioning, tearing and fogging.

[Click here to be redirected to the study's Home page on the Research Catalogue.](#)

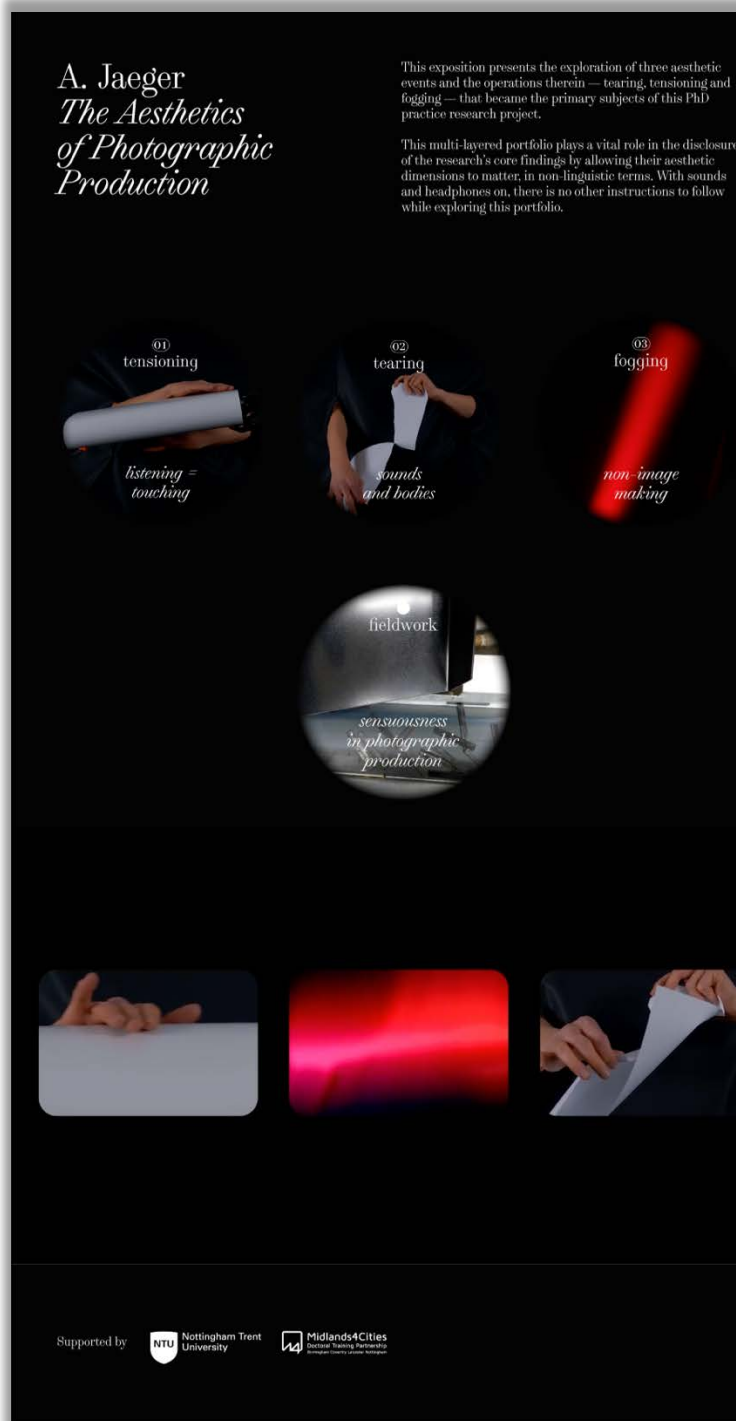
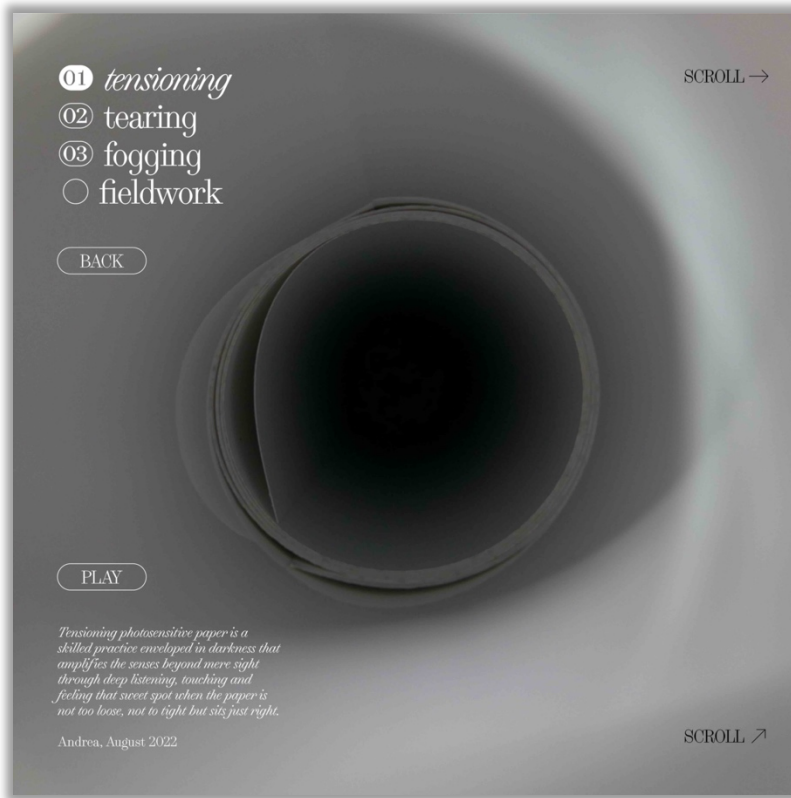


Fig. 9: Screenshot: Research Catalogue introduction to tensioning, fogging, tearing and fieldwork.

[Click here to be redirected to the study's Tensioning page on the Research Catalogue.](#)



**Fig. 10: Screenshot: Tensioning page on the Research Catalogue.**

[Click here to be redirected to the study's Tearing page on the Research Catalogue.](#)



**Fig. 11: Screenshot: Tearing page on the Research Catalogue.**

[Click here to be redirected to the study's Fogging page on the Research Catalogue.](#)



Fig. 12: Screenshot: Fogging page on the Research Catalogue

[Click here to be redirected to the study's Fieldwork page on the Research Catalogue.](#)

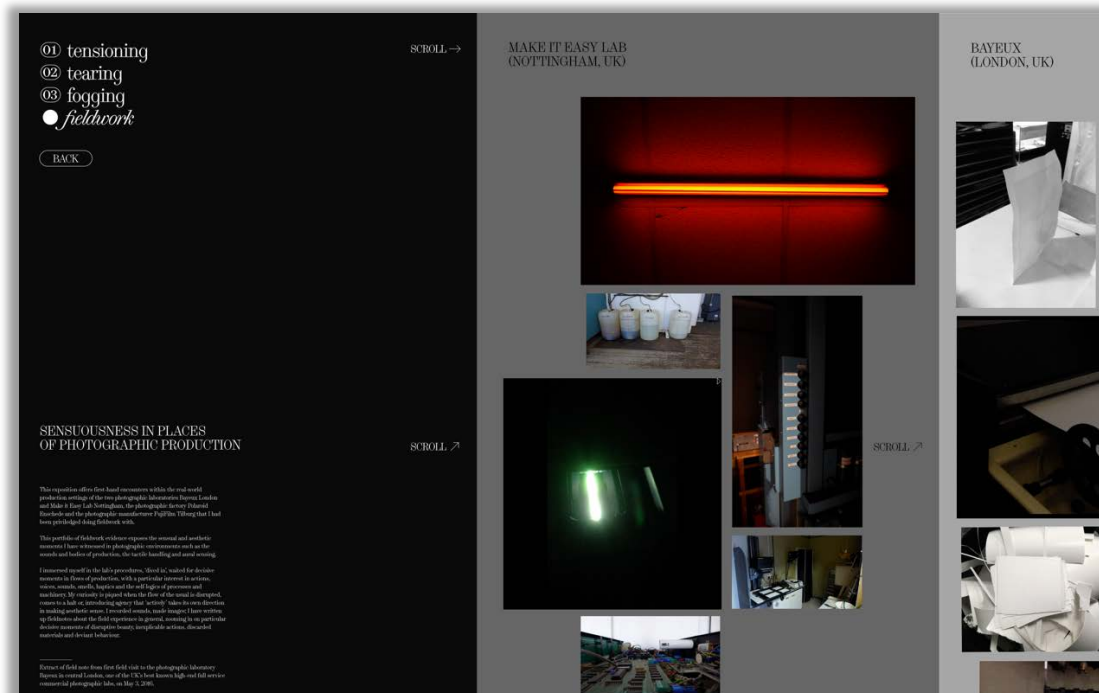


Fig. 13: Screenshot: Fieldwork page on the Research Catalogue.

The Fieldwork page allows the reader to step into the largely unseen everyday photographic practices at the four field partner sites: Bayeux London, Make it Easy Lab Nottingham, Polaroid Enschede, and Fujifilm Tilburg.

### **Ethics statement**

Throughout this PhD research, ethical considerations were of paramount concern. In particular, the study's responsible and reflective research practices acknowledge and respect the complexities and sensitivities of engaging with both human and non-human subjects. Another key ethical principle was to secure informed consent from all participants. To that end, participants were provided with comprehensive information about the nature and purpose of the study, and consent forms ensuring that participants fully understood their rights and the implications of their involvement were meticulously prepared and documented. To protect participant confidentiality, all reported research and associated documentation used anonymised names.

As well as securing informed consent, the research adhered rigorously to Nottingham Trent University's Code of Practice for Research. This ethical framework guided the project at every stage, ensuring that all research activities met established ethical standards. Ethical approval for the project was granted by the Art, Architecture, Design and Humanities Research Ethics Committee on February 26, 2019, affirming its integrity and adherence to ethical guidelines.

### **Chapter summary**

Setting out on an exploratory journey, the present study recalibrated the methodological compass in response to the discoveries and challenges that unfolded along the way. The path was not predetermined but emerged from hands-on engagement with the sensory and material underpinnings of photographic practice. Guided by post-humanist perspectives and

a drive to capture the multisensory experiences of photographic making, this iterative process trialled innovative methods that included Deep Listening and Visual Thinking Strategies. These methodological shifts and adaptations reflect the need for openness and flexibility in exploring the complex and often invisible dimensions of photographic practice.

To meet the challenges of exploring and documenting the multisensory dimensions of photographic making, the project ventured beyond the limitations of traditional qualitative methods. For example, fieldwork research often struggled to capture the elusive sensory and material interplay of tactile, auditory, and ephemeral elements in the everyday practices of photographic production. In particular, the initial reliance on representational methods failed to capture the nuanced sounds and ‘rhythmic vibrations’ of photographic laboratories and manufacturing environments. The novel methods adopted here reflect the challenges of engaging with these complex experiences and the materiality and sensory richness of the interplay between human and non-human agencies.

In response to these challenges, the required methodological pivot incorporated sensory fieldwork and a practice-based event-centric approach that extended beyond the visual to embrace the multi-layered tactile and auditory dimensions of photographic making. By embedding the research within commercial production settings, from photographic laboratories to manufacturers, a nuanced understanding of photographic practices was facilitated. The expansion of the research design to a bricolage approach that integrated non-representational methodologies allowed for a rich engagement with the material and sensory aspects with experimental aesthetic practice to explore the three key events: tensioning, tearing, and fogging.

While this bricolage approach revealed the complex interplay of materials, technology, and human and non-human agency in photographic making, it also presented some challenges related to the subjective interpretation of sensory experiences and the ephemeral aspects

of certain photographic processes. Nevertheless, by foregrounding sensory engagement, material interactions, and the contribution of more-than-human agency, these methodological innovations form a promising basis for more comprehensive future studies. The integration of post-humanist theories with sensory and material exploration advances a more-than-representational understanding of photographic practice. In particular, the incorporation of sensory fieldwork and artistic research opens novel avenues for studying the aesthetic dimension of making. As well as contributing to the theoretical discourse, these innovations also enrich my own plans to broaden the scope of empirical research beyond conventional visual analysis by merging the method of VTS with Deep Listening.

## Chapter 3 FINDINGS

**Part One** of this chapter describes the gradual and situated development of the present conceptual framework as it evolved during fieldwork. That evolution was informed by key empirical discoveries about everyday production practices in photographic laboratories. The fieldwork arc traces the emergence of key concepts that frame the empirical discoveries, including *aesthetic event*, *operation*, *process*, and *making/s*.

**Part Two** presents the core empirical findings in three case examples, each focusing on one event to disclose the aesthetic dimension of photographic making. Proceeding from the moment of discovery, fieldwork insights are consolidated by exploratory art practices and study sessions and contextualised in terms of existing scholarship to elucidate these aesthetic events. These findings serve to demonstrate and clarify aesthetic making and the concept of photographic practice beyond the photograph.

**Part Three** assesses the implications of the research findings—from the development of a novel event-led framework to the detailed studies of tearing, tensioning, and fogging—for the concept of photographic practice. In particular, this section highlights the significant influence of the multisensory, agential, and material conditions of photographic production. Three key materialisations identified in the study's findings capture the more-than-visual, more-than-human, and more-than-photograph aspects of production as making.

## Findings PART ONE

### Sensuousness and the Emergence of Aesthetic Events

The conceptual framework that underpins this research was developed during fieldwork in a diverse range of photographic production settings.<sup>12</sup> This section describes the framework's evolution in the wake of two initial discoveries: the subtle multisensory qualities of sound, touch, and vibration in the everyday processes of photographic production and the idea that certain operations can be characterised as 'aesthetic events'. In the more focused subsequent phase of fieldwork, I explored three of these operations – tensioning, tearing, and fogging – in greater depth. By incorporating the concepts of *process*, *operation*, *event*, and *making* to contextualise each aesthetic event in its operational setting within the broader context of the C-type printing process, the framework expanded beyond conventional conceptions of 'practice'. Informed by the two phases of fieldwork, the conceptual framework provided a solid foundation for subsequent exploration of the three observed aesthetic events and their significance beyond the photograph itself.

### Sensuousness in photographic production settings

The sensory qualities first encountered during fieldwork were recorded in written form and staged on the Research Catalogue platform. These rich tactile and auditory experiences sparked the crucial discovery of aesthetic events and subsequent explorations. The sensory nuances observed across the various photographic settings marked a key moment in the research journey. My initial speculative approach to these immersive experiences and grounding observations can be characterised as a version of sensory aesthetics.<sup>13</sup> In a

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<sup>12</sup> The fieldwork element of this research was conducted at two laboratories: Bayeux London (2016-2019) and Make it Easy Lab Nottingham (2016) and two manufacturing facilities Fujifilm Tilburg (2018) and Polaroid Enschede (2019).

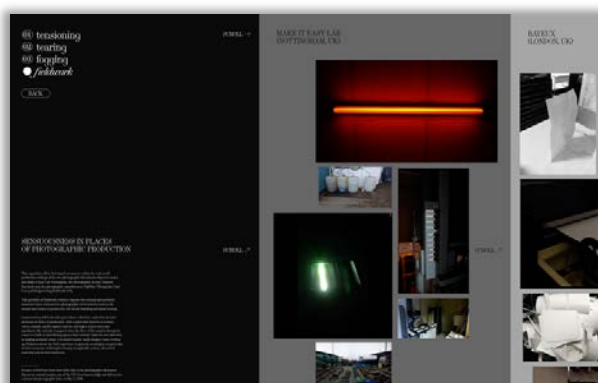
<sup>13</sup> In contrast to the primary meaning of 'aesthetics' as the philosophical and theoretical elucidation of art and beauty, the term 'sensory aesthetics' refers to attentiveness to the sensation, affect, and vitality of matter. For further details, see Bolt et al. (2007).



fieldnote from the photographic laboratory Bayeux, I described my entry to the scene as follows.

*I immersed myself in the procedures, 'dived in', waited for decisive moments, with a particular interest in voices, sounds, smells, haptics and the self-logics of processes and machinery. My curiosity is piqued when the flow of the usual is disrupted, comes to a halt or, introducing agency that 'actively' takes its own direction in fabricating matter. I have collected occurrences by recording sounds and making images of aesthetic formations of matter; I have written up fieldnotes about the field experience in general, zooming in on moments of disruption, inexplicable actions, discarded materials and deviant behaviour.<sup>14</sup>*

Taking a broad interest in the processes at hand, I was particularly attentive to moments of disruption in the desired seamless flow of photographic making. My encounters with the vibrations and sounds of production at the Polaroid factory were as vivid as the tactile handling and aural sensing observed in the photographic laboratories. In this initial fieldwork phase, I discovered just how sensuous these environments are. At this point, I invite the reader to tap into the sensory aesthetics of photographic production by engaging with what I witnessed; please follow the link [Sensuousness in photographic production](#) on the Research Catalogue.



**Fig. 14: Screenshot: Fieldwork page on the Research Catalogue.**

<sup>14</sup> Extract from field note recorded during first visit to Bayeux London (May 3, 2016).

My final fieldwork trip – an intensive week-long visit to Polaroid Enschede in November 2019 – proved to be a decisive moment in the research journey, culminating in the framing of *sensuousness in places of photographic production*. While shadowing and conversing with experienced production experts, I was granted direct access to every stage in the making of a Polaroid, immersed in the interplay of materials, machines, and floor workers. The combination of mechanical but melodic sounds and the graceful dance of the seemingly rigid heavy-duty machine produced a ‘loud softness’ that took hold of my body, vibrating and echoing long after I left the building. The soft movements of machine, operator, and materials embodied an aesthetic experience that was anything but still, and the exploration of these rich sensory landscapes revealed an intricate sensuousness. These initial fieldwork discoveries deepened my understanding of photographic making and led to the next significant development in the research journey: the identification of aesthetic events as key elements of the production process.

### **Three aesthetic events**

This important step in the research relates mainly to the two phases of fieldwork at Bayeux London (2016–2019). During the first phase (May–July 2016), while working alongside image technicians in the laboratory’s various departments (Film Development, Mini-Lab, Drum Scanning, Large Format Printing and Retouche, Hand Printing, and Framing), I made three decisive discoveries. By collecting artefacts and making visual and audio recordings, I had assembled a rich portfolio of materials, but the most striking moments of insight were difficult to capture or articulate. These were felt moments, and when I probed further, the image technicians responded with something like amazed disbelief. Specifically, I had singled out and inquired about three moments in the flow of C-type printing that were considered minor and were therefore more or less ignored. And yet, to me, there was something subtle and richly sensual about these moments, and this became the central reference point for the present research.

The first of those three pivotal moments occurred in the laboratory's back room of the Large Format Printing Department. Standing in total darkness, I listened with the loud sounds of Chromira, a large C-type printing machine – sometimes rhythmic, sometimes erratic. Suddenly, after a moment of silence, a succession of soft subtle sounds broke through: *schhhhhhht schhhht, schhhhhhht schhhht*. For a few fleeting seconds, I experienced a tangible bodily sense of excitement.

That same sensation marked the second moment of discovery in the laboratory basement. Standing at the large working table, I shadowed the image technician's skilful cutting of the printed photograph – 'the one' – separating it from the surrounding margin pieces. Those surplus pieces were cut or torn into further pieces and thrown into the wastepaper bin. And there, in that bin, amid the debris, torn and cut edges were standing up. In awe of this formation of discarded paper, I photographed it (Fig. 15).



**Fig. 15: Photographed aerial view of torn pieces standing up in the wastepaper bin.**

The situation was almost the same for the third moment. Standing at the large worktable in the laboratory's basement, I noticed a subtle cyan mark on one of the margin pieces discarded by the technician (Fig. 16). As the technician was about to cut it up, I said 'Please, no!' The technician paused and looked up at me in disbelief. 'Please, no cutting', I said; 'I wish to keep it'.



**Fig. 16: Margin piece of cyan fogged paper.**

Although I tried to document all three moments (as an audio recording, an image of the torn pieces in the bin, and a retrieved piece of cyan fogged paper), my efforts failed to capture their sensual dimension. Having experienced them as eventful and aesthetically charged, I began to work with the concept of the *aesthetic event*, which proved to be meaningful for various reasons. While all three were essential to the seamless process of C-type printing, they were considered insignificant in the laboratories' singular focus on producing the optimal image.

I singled out these moments as eventful interruptions of the C-type printing process because I was struck by their aesthetic qualities – the sounds of paper tensioning responding to machine sounds, torn paper that stood up among the bin debris, and cyan fogged paper that remained uncut. The concept of the event as an interruption or deviation that allows one to bring something new into existence is closely linked to Badiou's *Being and Event* (1988) and Deleuze's *The Logic of Sense* (1969). The American philosopher and gender theorist Judith Butler does not explicitly define 'event' in the same philosophical terms as Badiou or Deleuze, but in works like *Frames of War: When Is Life Grievable?* (2009), she implicitly addresses the event as an interruption that challenges and deviates from the norm, creating space for something new and transformative to emerge. Following these authors,

I argue that it is the disruptive quality of the aesthetic event that makes space for the aesthetic qualities of these moments to emerge.

In seeking to capture the sensuousness of the aesthetic event, I am especially drawn to thinkers like Bolt et al. (2004, 2007), Shotwell (2011), and Springgay (2019), who view aesthetic experience as embodied, material, and sensory engagement involving taste, touch, hearing, seeing, and smelling. For example, in *Art Beyond Representation* (2004), Barbara Bolt argues for a more embodied understanding of art, in which materiality and the process of art-making are as significant as the finished object. Bolt's approach to sensuous aesthetics emphasises the artist's engagement with the viewer's material and bodily experiences. This emphasis on art as event and process rather than fixed object calls for a deeper appreciation of the physical and experiential qualities of art making. Bolt's commitment to the act of producing and experiencing art as dynamic, bodily, and material engagement is consolidated in *Sensorium: Aesthetics, Art, Life*, edited by Barbara Bolt et al. (2007). This collection of essays explores artistic making and engagement as events marked by sensory and affective intensity. According to this new materialist account, viewing art is an active process that affects and is affected by its material and sensory environment. This sensuous aesthetics has been linked to education and pedagogy (Springgay 2019) and to ethics and politics (Shotwell 2011). Collectively, these thinkers look beyond traditional aesthetics to a deeper appreciation of the sensory, embodied, and lived experiences that constitute engagements with art and with the wider world. Framing non-routine occurrences during the C-type printing process as aesthetic events builds on these ideas by focusing on the sensory and disruptive qualities of such moments. In so doing, the present research redefines photographic making and contributes to a broader understanding of aesthetics that values sensuousness, embodiment, and the transformative power of events.

In singling out three pivotal moments in the C-type printing process and framing them as aesthetic events, the aim was to disclose the felt qualities of such events and their impact on the concept of photographic practice by addressing the following question: *'In photographic production, what else is aesthetically made beyond the photograph, and what are the implications for how we conceive of photographic practice?'* As it proved difficult to capture or convey these aesthetic qualities during the first phase of fieldwork, the next research phase had to look beyond direct visual or audio documentation. Drawing on Aristotle's foundational distinction between 'making' (poiesis) as goal-oriented action and 'doing' (praxis), as an end in itself (Tierney and Sallee 2008), I focused instead on acts of photographic 'making' and 'doing' as dynamically interwoven. As a continuous and open-ended course of materialisation, this more integrated approach acknowledged the significance of aesthetic events and challenged the traditional binary separation of poiesis and praxis.

For present purposes, *making* refers to the products of materialisation (such as the cyan fogged artefact), and *doing* refers to productive conditions (such as the darkness during tensioning) that may or may not deliver a tangible outcome. Accordingly, aesthetic events during the process of C-type printing were viewed as produced materialisations and productive conditions, which I refer to as *making/s*. This conceptual reframing informed the second iteration of fieldwork at Bayeux London (in September–Oct 2019) in a fresh attempt to capture the three aesthetic events as open-ended and emergent making/s.

During that second iteration, I engaged in greater depth with the three aesthetic events by re-experiencing each event, interviewing the image technicians, making audio and visual recordings, taking notes, and collecting artefacts. The challenge then was to find the right terminology for tensioning, tearing, and fogging – were they processes, operations, episodes, activities, doings, or phases, or was some combination of these terms required

to convey the procedural context in which these aesthetic events occurred? In the ongoing struggle to articulate experiences that evaded precise description and shifted in meaning throughout, I chose not to refer to tensioning, tearing, and fogging as ‘practices’ – a term I considered too vague in scholarly usage. Instead, I adopted the terms *process*, *operation*, and *event*, linking each aesthetic event to the operation from which it emerged within the overarching context of the C-type printing process.

As this conceptual framework evolved across two iterations of fieldwork, my speculative and exploratory approach brought me closer to the inherent sensuousness of photographic production and the characteristics of the aesthetic events that became central to this inquiry. In the second iteration at Bayeux London, I was better able to move beyond traditional conceptions of ‘practice’ to frame the three aesthetic event in terms of their emergent operations, tensioning, tearing, fogging, within the C-type printing process.

What comes next, are the core findings of my research. I will present these in the format of case examples with each focusing on one of the three aesthetic event and its operation.

Each of the case examples begins by recounting the moment of discovery of the aesthetic event in question. Building on the insights from both phases of fieldwork, I go on to describe the exploratory art practices and study sessions I devised to disclose the making/s of these aesthetic events. In each case example, the findings are contextualised to show how these matters are addressed (or neglected) in the existing literature and to consider the implications for prevailing conceptions of photographic practice. Ultimately, the agential, multisensorial, and material qualities foregrounded in the case examples lend support to the present argument that photographic practice can be more fully understood as more than visual, more than human, and more than the (finished) photograph.

## Findings PART TWO

### Introduction

The aesthetic events observed during fieldwork directed my attention to three operations (tensioning, tearing, and fogging) that commonly occur during C-type printing. The case examples that follow describe my attempts to ‘get closer to’ these aesthetic events in order to address the overarching research question: *‘In photographic production, what else is aesthetically made beyond the photograph, and what are the implications for how we conceptualise photographic practice?’* The reader is again invited to access the Research Catalogue exposition (with headphones) for ten to twenty minutes to engage with the multisensorial ‘showing and telling’ dimension of the project beyond the written submission.

[Click here to be redirected to the Research Catalogue exposition.](#)

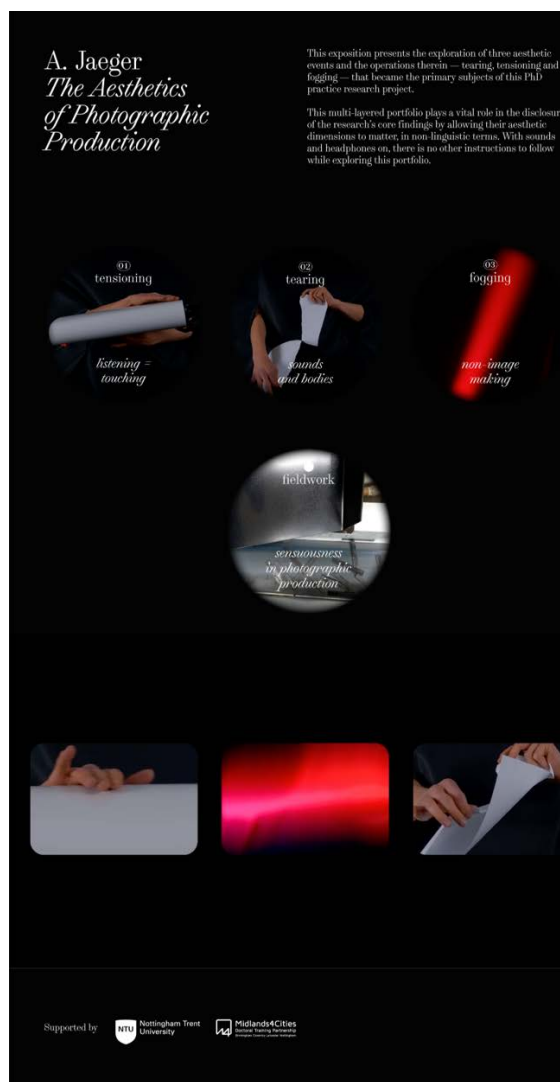


Fig. 17: Screenshot: Research Catalogue introduction to tensioning, fogging, tearing and fieldwork.



## Navigating the case examples

Each case example includes a written component to accompany the research materials featured on the Research Catalogue (RC) platform. For examination purposes, a physical exhibition was also mounted, and exhibited artworks are shown on the RC. Throughout the text, the reader will be guided to specific materials on the RC that present the findings in multimodal form. Entitled *The Aesthetics of Photographic Production*, *The Research Catalogue*, the online exposition is available at

<https://www.researchcatalogue.net/profile/show-exposition?exposition=603276>

The screenshot shows the Research Catalogue interface. At the top, the header includes the site name 'RESEARCH CATALOGUE' and the tagline 'AN INTERNATIONAL DATABASE FOR ARTISTIC RESEARCH'. Navigation links for 'Home', 'Institutional Portals', 'Journals', 'Projects', and 'Researchers' are present. A search bar is located in the top right corner. The main content area displays the profile for 'THE AESTHETICS OF PHOTOGRAPHIC PRODUCTION (LAST EDITED: 2024)' by Andrea Jaeger. A featured image shows a hand holding a piece of paper with the text 'A. Jaeger's Aesthetics in Praxis: 01 tensioning, 02 fogging, 03 tearing'. Below the image is an 'OPEN EXPOSITION' button. To the right, the 'About this exposition' section describes the research project, which explores the sensory and material facets of photographic production, challenging the traditional focus on the final image. It details the research questions, the process of making a photograph, and the aim to redirect attention to the processes of photographic making. Below this, a paragraph describes the practice-based research across diverse photographic settings, including the tensioning, fogging, and tearing of photosensitive paper. At the bottom, a table lists metadata for the research exposition.

type	research exposition
keywords	Posthuman performativity, aesthetic experience, production process, photographic practice, beyond representation, post-photography, material imagination, material engagement, production aesthetics, PHOTOGRAPHY, photographic methods, photograph, photosculpture, photogrammetry, photographic thinking
date	17/07/2023
last modified	29/05/2024
status	in progress
share status	public
affiliation	Nottingham Trent University
copyright	Andrea Jaeger
license	All rights reserved
language	English
url	<a href="https://www.researchcatalogue.net/view/603276/2781638">https://www.researchcatalogue.net/view/603276/2781638</a>
external link	<a href="https://andreajaeger.art/home.html">https://andreajaeger.art/home.html</a>

Fig. 18: Screenshot: Study profile on the Research Catalogue.

## **Case Example One: Tensioning**

### ***Listening and touch: The more-than-visual in photographic making***

#### **Introduction**

This case example explores the operation of tensioning as part of an aesthetic event that highlights the roles of listening and touch in the C-type printing process and how this more-than-visual dimension of photographic practice invites further exploration of multisensory attentiveness. While there has been some discussion of listening and touch in photographic contexts (e.g. Edwards 2005; Campt 2017; Brown and Phu 2014), the significance of these forms of engagement – especially tactile engagement – has largely been overlooked. To address this research gap, I utilised a method by Tim Ingold described as ‘telling by hand’ to explore the tactile and auditory dimensions of the aesthetic event.

When the limitations of this approach became apparent, I produced two artworks to elucidate those limitations: ‘Too loose, too tight and just right’ (featured on the Research Catalogue) and ‘Touched and Listened with (leader and tails)’. In addition, I developed the experimental study session *Touching Acts* as a means of exploring the neglected tactile dimension of tensioning. This case example foregrounds the significance of listening and touch in the C-type printing process and, by extension, in photographic production. The observed need for multisensorial attentiveness informed the development of this framework for investigating photographic making beyond the conventional emphasis on the visual.

#### **The initial moment of discovery**

The experiential testimony below details the physical and sensory aspects of this pivotal incident as an intuitive encounter at Bayeux London.

*Interested in the image technicians' everyday routines, I follow one of them into the back room of the laboratory. I am asked to stand still and to stay close to the wall to give them enough room to walk around the high-tech machine they are pointing at. Looking around, I notice that the room has no windows and is roughly four metres square. The space is filled with photographic printing machines, including a Colenta Widetrack Colour Print Processor for developing RA-4 paper. Next to Colenta, two bulky machines of human height stand side by side, with sides that open like wings. According to the stickers on the back, both are ZBE Chromira large-format colour LED printers. These machines occupy most of the available space. I later learn that the Chromira optical printer is widely used in high-end professional photographic laboratories.*

*When I am introduced to Chromira, the image technician's task is to swap the exposed photographic paper from Chromira to Colenta for processing. Most importantly, this is where the discovery starts, as the swap is completed in total darkness.*

*Once the lights are switched off, the room feels chilly. It takes a moment to adjust to the darkness; although my eyes are wide open, there is no light and no visible point of reference to ground myself. In the all-enveloping blackness of this chilly room, I feel weightless and begin to listen closely to the sounds of the printing machine – sometimes rhythmic, sometimes erratic; loud, then soft and fading. And then, a fleeting but intense aesthetic moment that lasts only seconds is filled with soft and subtle <schhhhhht schhhht> sounds that call for my attention. I do not know what they are or what they might mean, but despite their softness and fragility, they stand out in the crowded soundscape. Standing in the dark, I listen as this sound touches me. I am electrified and feeling goosebumps.*

Describing this moment in the first-person active present tense serves to re-enact the experience and what I felt at the time. What emerged during the printing process was an intense but fleeting aesthetic moment, lasting only seconds, filled with soft and subtle <schhhhhht schhhht> sounds. In getting closer to this aesthetic moment, I realised that I was listening to the feeling of the paper as the technician stroked the full length of the roll to gauge its tension. This aesthetic event emerged during the tensioning operation and seemed unique in its subtlety, fleetingness, and invisibility. It pointed to acts of listening that could not be seen or easily talked about; most importantly, they could not be photographed. Here, hidden away in the back room of the lab, this elusive aesthetic event made itself heard during the C-type printing process but was otherwise overlooked as attention focused on the desired final image.

This initial discovery marked the starting point for an exploration of *listening and touch as* aesthetic making/s produced during tensioning but previously overlooked, as the photograph took precedence as the dominant or sole aesthetic output. This prompted me to revisit the existing discourse around touch and listening in photography. Although seminal contributions to the field (Edwards 2005; Campt 2017; Brown and Phu 2014) have explored these issues in the limited context of the photographic image, I contend that their pivotal importance in the broader practice of photography has been neglected, especially in the case of tactile engagement, highlighting the need for a more nuanced approach.

### **Listening and touch in photography scholarship**

Both *listening* (Edwards 2005, 2008; Voegelin 2010; Campt 2017) and *feeling* (Prescott, Diamond and Wing 2011; Brown and Phu 2014; Elo and Luoto 2018; Reckitt 2019; Hammond 2020) are emerging topics of interest in photography scholarship and further afield. In the case of listening, the two seminal thinkers are Tina M. Campt, a Black feminist theorist of visual culture and contemporary art, and Elizabeth Edwards, a visual and

historical anthropologist. Both have explored the use of photographs as integrally linked to other sensory modalities, including touch and sound. According to Edwards, 'The experience of the photographs, their meaning and impact cannot be reduced merely to a visual response but (...) must be understood (...) as bearers of stories in which visual, sound, and touch merge' (2005, p. 41). In Edwards' view, reading a photograph is a multisensorial form of engagement. Her research acknowledges the relevance of listening and touch but in the context of reading existing photographs rather than the processes of photographic making. The present research seeks to bridge this gap by framing listening and touch as aesthetic making/s in the tensioning operation observed during C-type printing.

Similarly, Camp's (2017) methodical approach is highly relevant to the radical move from vision to sound by way of touch. In their book *Listening to Images* (2017), Camp claimed that one can connect through listening and tactile engagement to historic photographs of Black subjects by looking beyond the photographed event and what one usually sees, treating the photograph as an object of investigation. Camp's method is to listen to the *affective frequencies* of the event to connect with the photograph's 'felt sound' (2017, p. 7). The method is underpinned by an understanding of sound as an embodied modality constituted by vibration and contact; in other words, sound can be listened to *and felt*. For Camp, *listening* extends far beyond what can be heard with the ears by attuning all of one's senses to the 'other affective frequencies through which photographs register' (2017, p. 9).

Engaging with the work of Edwards and Camp has deepened my understanding of the role of listening in photography scholarship. It became clear, however, that existing studies have focused predominantly on the interpretation of photographs rather than the processes of photographic making. In *Listening to Images*, Camp concluded that listening to photographs should not be considered in isolation from touch. Affirming that these senses are inseparable and intertwined, the multimodal approach adopted in the present study

addresses the aesthetic manifestations and productive conditions of listening and touch within the tensioning operation. Additionally, to address the gaps in the existing literature, which has concentrated mainly on the emotional resonance of listening, I investigated the tactile dimension of listening and its physical effects.

Incorporating perspectives from sensory studies, Prescott, Diamond, and Wing (2011) explored the significance of active touch in human to non-human experiences. Emphasising the depth and importance of tactile sensing in understanding and navigating the world and the proactive nature of touch in sensory exploration, they argued that ‘to discover the world through touch, we must act upon it’ (2011, p. 2989). In *Figures of Touch* (2018), Mika Elo and Mikko Luoto explored the paradoxical nature of touch as simultaneously tangible and omnipresent yet difficult to articulate. Although this fundamental everyday experience is deeply familiar and integral to our interactions with the world, touch remains resistant to straightforward description or theoretical confinement. As Elo and Luoto observe, ‘Touch, not unlike time, is something seemingly self-evident but hard to put into words, something most familiar and yet strange’ (2018, p. 7).

Among photography scholars, Brown and Phu have presented a compelling case for the significance of tactile interaction with photography. In their seminal work *Feeling Photography*, they argued that ‘touching photographs, whether it is the glossy surface of a developed print itself or even the protective frame that might enclose this print, is one of our most compelling engagements with the medium’ (2014, p. 14). Asserting that physical engagement of this kind is one of the most intense ways of connecting with photographs, they characterise this connection as a tactile experience enriched by emotions and physical sensations like pressure, texture, and vibration. The book explores the intersection of touch and emotion, focusing primarily on the affective dimensions of touch. This aligns with Barthes’ discussion of photography’s capacity to ‘touch’ the viewer emotionally – a theme

he explores in terms of the photographic punctum as a 'wound' inflicted by the image that moves, touches, and 'pricks' the observer (1984, pp. 25–27).

More generally, however, the literature offers few insights into how tactility influences 'feeling' beyond the context of handling photographs, and there is no discussion of tactile engagement during the processes of production. To bridge this gap, the present study investigated the practical and aesthetic contributions of touch to photographic making by shifting the focus from reading photographs to the experience of immersion in photographic production settings. My fieldwork confirmed that these spaces are not readily accessible, which may explain why such experiences have been overlooked. The requirement, then, was to find ways of capturing and documenting the aural and tactile acts involved in photographic making. The first case example unpacks the aesthetic intricacies of listening and touch in the practice of tensioning, employing a technique known as 'telling by hand'.

### **Telling by Hand**

During the second round of fieldwork at Bayeux London, I began a more in-depth exploration of tensioning as an aspect of making. On September 18, 2019, when I inquired about the tensioning operation, an image technician invited me to observe: 'Follow me, I'll show you'. This kind of hands-on demonstration embodies Ingold's concept of 'telling by hand' (2013, p. 111), which invites practitioners to impart their knowledge and skills as 'knowhow' through stories that evolve within a sentient field regarding touch, movement, and the materials at hand. For Ingold, trying to articulate these felt experiences in verbal form can obscure their very essence (2013, p. 111). Instead, he suggests that practitioners should trace a storytelling path that facilitates 'guided rediscovery' rather than providing explicit instructions.

On this occasion, however, the image technician chose to convey their knowhow as a series of step-by-step instructions that focused on the procedural aspects of tensioning but failed

to touch on the auditory or tactile sensations involved. Despite further probing, it proved challenging to elicit any reference to these sensory experiences, not least because the well-lit demonstration contrasted sharply with the authentic tensioning operation, which was typically performed in the dark. While the image technician's narrative meticulously outlined the relevant materials and procedures, it also foregrounded the methodological challenges of conveying the aesthetic qualities of listening and touch. In particular, the productive conditions for effective tensioning were clearly undermined by turning the lights on. In the dark, the absence of visual stimuli fosters a greater reliance on the relational and sensorial qualities of touch and hearing. This realisation directed my attention to the elaborate convergence of sensory modalities in photographic production and the aesthetic conditions that facilitate that convergence.

The image technician also found it difficult to articulate the types of movement and touch that inform the tensioning process. While acknowledging the reliance on auditory cues when touching the photosensitive paper to assess its tension, the nuances of these subtle sounds again eluded description. Nevertheless, the realisation that tensioning is performed with the utmost precision and relies heavily on tactile and auditory cues that are difficult to verbalise was a significant insight into the aesthetic dimension of this operation.

In exposing these relational and non-visual aesthetic qualities of listening and touch that resisted straightforward articulation, this phase of fieldwork confirmed the key role of aural and tactile experiences in photographic making. However, as these experiences were both invisible and difficult to express in words, I decided to materialise their aesthetic dimension by producing two artworks: a video essay entitled 'Too loose, too tight and just right' (Jaeger 2021) and the installation 'Touched and Listened with (leader and tails)' (Jaeger 2022).



## Showing the more-than-visual aesthetics of listening and touch

The decision to materialise the aesthetic dimension of tensioning as a tangible outcome was informed by the concept of ‘showing’ articulated by Mersch, a German philosopher specialising in media philosophy, aesthetics, and art theory, who has been exploring the dynamics of saying and showing since the mid-1990s. Mersch elucidates the reciprocal relationship between the act of showing and the object shown (see for example Mersch 2015, 2019) by demonstrating how the very act of showing imbues the objects shown with meaning.

In the present context, producing the two artworks seemed a useful means of materialising the aesthetic aspects of the tensioning operation, which would otherwise remain unseen. Before elaborating on how these artworks elucidate those qualities, I invite the reader to interact with the work ‘Too loose, too tight and just right’ (Jaeger 2021) and its making by following this link:

<https://www.researchcatalogue.net/view/603276/2228644/1732/1829>

The video essay ‘Too loose, too tight, and just right’<sup>15</sup> deliberately immerses the viewer in total darkness. The aesthetic conditions are accentuated by a soundscape of rhythmic and occasionally erratic noises, interspersed with textual fragments; subsequently, the written dialogue pierces the darkness. The piece contrasts recorded sounds of the invisible tensioning operation with descriptive text-based accounts that are visible but unheard. The sounds do not correspond to the visual narrative; in the darkness, the sensory experiences of listening and touch depend entirely on sound and evade capture by visible words. Any visual interpretation of these aesthetic qualities would miss the intrinsically nonvisual

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<sup>15</sup> Andrea Jaeger (2021) ‘Too loose, too tight, and just right’; video essay (12min 22 sec).

conditions of their production. By employing this mixed mode of presentation, 'Too loose, too tight, and just right' embodies the more-than-visual aspects of listening and touch.

The non-photogenic and more-than-visual aspects of tensioning are further elaborated in the installation 'Touched and Listened with (leader and tails)',<sup>16</sup> which again demonstrates that these aural and tactile experiences exceed visual comprehension. While 'Too loose, too tight, and just right' accentuates the auditory experience, the mode of presentation in 'Touched and listened with (leader and tails)' is 'tactile showing'. This multimedia installation comprises discarded strips of photographic paper, each bereft of any visual content. Known as 'leader' and 'tails,' these strips play a critical role in the C-type printing process, as they are attentively touched and listened with while being tensioned tightly to ensure a seamless operation. These end pieces are then trimmed away from the desired photograph. The installation is an assemblage of discarded pieces that I collected over the course of a week at Bayeux London.

By refraining from visual representation, the installation opens a space for exploring other sources of meaning in the tactile and aural modes of engagement typical of photographic production settings like laboratories and manufacturing facilities. The absence of visual content foregrounds the tangible realities of listening and touch as vital aesthetic making/s. A 'Do touch, Do Listen' policy encourages the audience to listen and physically engage with the sounds produced by the interaction with photographic paper. The invitation to engage in this unconventional act reflects the novelty of this strategy, which unveils the neglected tactile dimension of the C-type printing process.

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<sup>16</sup> Andrea Jaeger (2022) 'Touched and listened with (leader and tails)': installation (photographic paper strips, poster rail; dimensions vary).

## Exploring the felt dimensions of listening and touch

To explore the tactile dimension of the operation of tensioning photosensitive paper, I concentrated initially on the fieldwork audio recordings from Bayeux London. While these captured the sounds of the technicians' hands interacting with the paper, the details of this contact remained elusive – was it stroking, caressing, or some other form of touch? As discussed earlier, my attempts to elucidate these tactile interactions through conversations and practical demonstrations highlighted the inherent difficulty of verbalising actions performed in the absence of light that demand an intense focus on the nuanced interplay of listening and touch.

The feasibility of learning the operation of tensioning directly was quickly dismissed, as the procedure-based and goal-oriented laboratory environment left little room for exploratory engagement. Instead, I co-facilitated an experimental study session entitled *Touching Acts*, which investigated the role of tactility in photographic making. As a means of exploring the enmeshed condition of listening and touch in photographic production, this strategy was underpinned by academic discussions of touch and insights from Deep Listening® Intensive training.

The relevant literature highlighted three pivotal challenges to be navigated in addressing the felt dimensions of listening and touch. The first of these related to the complexity and 'messiness' of capturing tactile experiences (see for instance Brown and Phu 2014, p. 13), which is widely acknowledged in the current discourse. Despite its everyday familiarity, the nuanced and elusive character of touch makes verbal articulation challenging (Elo and Luoto 2018, p. 1). According to Elo, touch necessarily involves an interaction between self and 'other' as a medium for experiencing difference and 'foreignness' (2018, p. 47). Following Campt (2017), a second challenge was that listening cannot be treated as an isolated sense. Instead, Campt frames listening as an extensive sensory engagement

involving attunement of all the senses (2017, p. 9). To explore the felt dimension of listening and touch in a meaningful way, then, the 'Touching Acts' study session embraced the enmeshed and inseparable condition of these sensory modalities. Finally, the scholarly discourse on tactile perception identified a third challenge: that to be fully experienced, touch requires active participation (Prescott et al. 2011, p. 2989).

To address the first of these challenges, the *Touching Acts* method embraced the 'sense of foreignness', acknowledging that touch thrives on the novelty of encountering 'the other' – 'We do not feel the same; we feel only differences' (Elo and Luoto 2018, p. 1) – and permitted only nonverbal forms of expression. To overcome the second challenge, I engaged in Deep Listening® Intensive training to enrich my understanding of listening as an embodied experience as articulated by Pauline Oliveros.<sup>17</sup> Oliveros' conception of listening as comprehensive sensory engagement extends beyond hearing to full bodily sensation, characterising sound as fundamentally tactile.<sup>18</sup> The training revealed the profound connection between listening and touch as an encounter that requires active engagement with one's surroundings. Accordingly, 'Touching Acts' encouraged active engagement with the felt dimensions of listening and touch as deeply intertwined and relational modalities.

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<sup>17</sup> This training was facilitated by the Center for Deep Listening, Rensselaer Polytechnic Institute, Troy, NY (September–December 2021).

<sup>18</sup> Oliveros, an esteemed American composer and Research Professor of Music, conceptualises listening as a comprehensive practice that broadens one's consciousness of sound to encompass as many facets of awareness and attention as possible (Oliveros 2020, p. xxiii). The Deep Listening® training I undertook as part of this research significantly enhanced my listening ability and heightened my awareness, enabling me to connect with and respond to vibrations felt through bodily contact with my surroundings. This embodied learning produced two critical insights. First, a subtle but profound shift from listening 'to' to listening 'with' reflects a more nuanced understanding of the interconnectedness of listening and touch, where listening is perceived as an experience activated by tactile engagement. Secondly, the use of 'with' to accentuate a holistic approach to listening acknowledges that listening is an immersive experience that involves perceiving the world as deeply interconnected rather than as detached or separate.

## Feeling Photography: The 'Touching Acts' Approach

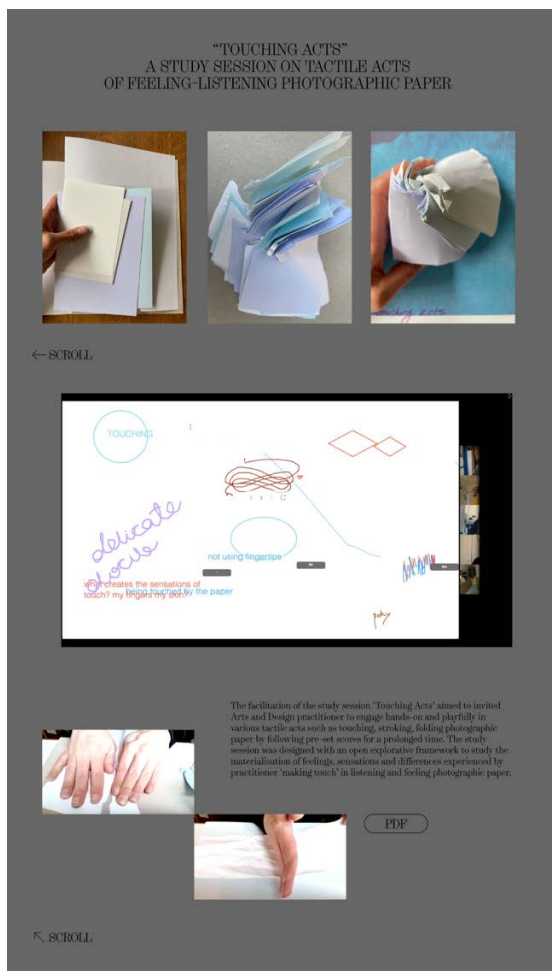
I collaborated with creative writer-researcher Victoria Zoe Callus to develop and facilitate *Touching Acts*, an exploratory study session that invited arts and design practitioners to immerse themselves in tactile interactions with photographic paper (e.g. touching, stroking, folding), guided by predetermined event scores.<sup>19</sup> The aim was to explore tactile sensing in a new way, moving beyond photographic production through immersive sensory exploration.<sup>20</sup>

This format introduced the participants to a novel form of sensory engagement; each interaction lasted about five minutes, creating an unusual and intensified experience. Rather than replicating the precise aesthetic conditions of the laboratory tensioning process, the workshop prompted the emergence of alternative tactile and auditory responses. Participants were also encouraged to articulate their sensory experiences and personal interpretations of the tactile acts through free association. The diverse responses and occasional deviations from the event scores to follow their own instincts enriched the collective exploration of tactile sensing. A portfolio detailing the workshop framework is available on the Research Catalogue, along with video and photographic documentation, offering an in-depth exposition of the workshop's dynamics. [Click here to be directed to the Portfolio on the Research Catalogue.](#)

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<sup>19</sup> *Touching Acts* was trialled at Nottingham Trent University's Doctoral Research Encounters in Artistic Methodologies seminar on May 21, 2021.

<sup>20</sup> The workshop setup destabilises and disrupts the purpose-driven function of feeling photographic paper, allowing for alternative forms of this action that initiate an aesthetic response: 'instead of achieving or producing knowledge, she, the one who is behaving aesthetically, increases her possibilities of understanding, i.e. of repositioning towards the object of her attention' (Arteaga 2017, p. 25).



**Fig. 20: Screenshot: *Touching Acts* portfolio.**

The analysis of workshop responses yielded important insights. At first, the participants perceived the act of touching photographic paper as an unconventional practice, echoing previous findings that seldom addressed the tactile dimension of ‘feeling’. However, as the workshop progressed, their hesitancy to engage with photographic paper gave way to an appreciation of the intrinsic value of tactile interactions that differed markedly from the laboratory technicians’ narrative. This shift in perception underscored the paper’s active role in the sensory exchange, as participants noted the reciprocity of paper tips and fingertips.

This exploration of active tactile engagement challenged preconceived notions of the passivity and untouchability of photographic paper. Extending beyond conventional boundaries to encompass the entire body, the standard perception of touch as predominantly hand-driven was also challenged. In their feedback, participants referred to an awakening of dormant tactile practices reminiscent of the darkroom, such as using one’s

lips or face to feel the paper's texture. In this way, the experience challenged the perceived irrationality of direct tactile interaction with photographic paper, which is usually seen to require careful handling.

In stark contrast to the perceived untouchability of the finished photograph, the experimental format of *Touching Acts* unveiled the hands-on, tactile handling in photographic production: a tactile reality where paper is pulled, 'takes a bath', is blow-dried and touched unflinchingly in the making of photographic prints. This emphasis on tactility also served to enrich discussion of the sensory experience of photographic practice beyond a human-centric view.

### **From Reader to Sensor: A Paradigm Shift in Photographic Practice**

This case example exploring the tensioning of photosensitive paper challenges the prevailing visual-centric discourse. In celebrating the photograph as end product, the sensory dimensions of its making are commonly overlooked. The two aesthetic making/s encountered during tensioning – listening to subtle sounds and feeling the paper's tension – have previously been neglected by photography scholars because of their ineffable non-visual qualities. Underpinned by scholarly insights into touch and listening, the integration of observations and conversations with image technicians, artistic interventions, and an experimental study session sought to bridge the gap between the tangible act of making and sensory experience. Ingold's 'telling by hand' approach (2013, p. 111) informed the discovery that the nuances of listening and touch elude verbal description but thrive in the darkness of the photographic laboratory. The production of two artworks – 'Too loose, too tight and just right' (Jaeger, 2021) and 'Touched and listened with (leader and tails)' (Jaeger, 2022) – materialised the multisensory and more-than-visual qualities of these aesthetic making/s.

The experimental session *Touching Acts* highlighted the agency of touch and a sense of 'being touched' by the materiality of the photographic paper, which one participant described as 'acting back'. This experience aligns with new materialist perspectives that advocate a relational view of agency, challenging anthropocentric narratives in favour of a more expansive framework for aesthetic interaction in photographic practice. This will be further explored in the third case example on fogging.

In conclusion, these findings confirm that the darkness typical of the photographic laboratory is conducive to sensory and aesthetic practices that are invisible and ineffable but integral to photographic making. This invites a re-conceptualisation of Barthes proposed *reader* (1977, p. 148), as an embodied *participant* in the photographic process. Inspired by Natasha Myers' concept of 'becoming sensor' (Myers 2017), this entails a deeper engagement and a more nuanced understanding of photographic practice that extends beyond the visual to encompass the full spectrum of sensory experience. This new paradigm also lays the groundwork for enriched sensory-driven exploration of the aesthetic making/s produced during the C-type printing process beyond the visual issue of the optimal photograph as end product.



## Case Example Two: Tearing

### ***Sounds, bodies and sensations: Aesthetic productions beyond the final image***

#### **Introduction**

Building on Case Example One, which shifted the emphasis from the photograph as visual output to the multisensory processes of photographic making, Case Example Two explores the neglected realm of photographic sounds, bodies, and sensations. This case again emerged from fieldwork at Bayeux London, where the discovery of torn and cut edges in a bin hinted at a rich aesthetic landscape beyond the finished photograph. Interrogating the materiality of the act of tearing and associated auditory experiences, I addressed the following question: *What aesthetic outcomes does the act of tearing produce beyond the photograph, and how does this affect our understanding of photographic practice?*

The journey from initial observation to broader exploration engaged with the issue of the body in photographic scholarship and practice (as discussed in more detail below). Based on the observation that photographic paper is not just a carrier of images but has sculptural presence and auditory depth, I embarked on an exploration of the *material depth of photographic paper*, using macro photography and microscopic analysis of torn edges to reveal a material world beyond the purely visual. The experimental study sessions *Tearing Paper* and *Deep Listening with Tearing* initiated further open-ended exploration of tearing beyond its functional role by exposing the alternative aesthetic makings of photographic sounds, sensations, and bodies. The findings support a revised conception of photographic practice as deeply material and richly sensorial, encompassing sounds, sensations, and the sculptural depth of the material itself. In capturing the full spectrum of sensory engagement in photographic making, the study highlights the limitations of traditional research methodologies and sets the stage for further exploration of the role of more-than-human agencies.

## Photographic bodies, sounds, and sensations

In this case, the aesthetic event in question was first observed on July 4, 2016 at Bayeux London. I documented the moment of discovery as follows.

*Standing at the large working table, I shadow the image technician skilfully cutting the printed photograph – ‘the one’ – away from the surrounding margin pieces. All of those margin pieces are further cut or torn into pieces and thrown into the wastepaper bin. And there in the bin, amid that paper debris, torn and cut edges are standing up. In awe of this formation, I photograph it.*



Fig. 21: Aerial view of torn paper in the bin.

*In trying to understand what I see, one action becomes omnipresent: the repeated tearing of photographic paper before disposal into the dustbin.*

*I ask the image technician I am shadowing if I could record him while tearing paper, and he consents. Waiting until I have the recording device in place and activated, he returns to his rapid and steady routine, tearing discarded photographic paper prints into pieces. Much to my surprise, he comments on the tearing: ‘...how nice, the sound and feeling’.*

Tearing is routinely employed in photographic laboratories as part of the process of producing ‘the one’. Within the act of tearing, I noted two distinct aesthetic making/s: the sculptural forms created by accumulations of torn paper pieces in the waste bin, and the accompanying sounds and sensations. These disregarded photographic bodies, sounds, and sensations emerged from this seemingly mundane task during the C-type printing process. This revelation prompted deeper investigation of the aesthetic dimensions of tearing, which have to date been overshadowed by the exclusive focus on the final photographic image. To begin, it is useful to situate these observations in the broader context of how photography scholarship and curatorial practice address (or fail to address) these alternative forms of aesthetic making/s.

### **The body in photographic scholarship and practice**

Some recent artworks and exhibitions have foregrounded the sculptural potential of photographic paper, including *Photographic Beings* (2020), *Paper into Sculpture* (2017–2018), and photoworks by Jan McCullough, Tom Lovelace, and Thomas Demand. These endeavours can be situated in the long tradition of experimental practices that explore light, paper, chemistry, and time as photography’s essential materials.<sup>21</sup> Curated by Paulius Petraitis, *Photographic Beings* at the Latvian National Museum of Art (October–November

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<sup>21</sup> For a historical overview of experimentation from photography’s beginnings to contemporary practice, see Heckert’s seminal work *Light, Paper, Process: Reinventing Photography* (2015).

2020) linked photography to dynamic complex beings that exceed the flatness of the image and assert their presence as a 'body'. Within this expanded field, Tom Lovelace is a British artist whose work combines photography, performance, and sculpture. Challenging these conventional disciplinary boundaries, Lovelace's 'photo collage' engages with this intersection, where photographic paper asserts its material physicality as a tactile three-dimensional body.

Building on this theme, Jan McCullough is an Irish visual artist who works with photography and installation. McCullough's 'Constructions' echoes my own initial observations of the photographic paper's presence 'sitting' on a table—mirroring the 'standing up' posture of torn paper edges in the bin. The work emerged from a series of site-specific studio experiments with ad hoc constructions that respond to the available materials within the space. The resulting work is a sculptural arrangement that emphasises the negative space left by a cut-out centre, celebrating the residual paper as an object with its own aesthetic and physical gravitas.

German artist Thomas Demand has further enriched the exploration of photographic paper's sculptural presence. More than mere recreations of found photographs, his meticulous paper constructions are transformative works that elevate the commonplace materiality of paper. His approach is a recursive process involving the construction of three-dimensional paper models, which are then photographed, interrogating the intrinsic properties of paper itself. In Demand's 'Farm 31', a seemingly ordinary sheet of paper is manipulated to become a complex and profound layered object. Demand invites the viewer to consider the transformative moment when a sheet of paper exceeds mere surface to become a conceptual and physical shelter. 'Farm 31' conveys the physicality of paper as anything but a flat surface.



**Fig. 22: 'Paper Bales' (Joshua Neustein 1976/2017) [two paper bales] © Joshua Neustein  
Image: © Kevin Todora.**

The exhibition *Paper into Sculpture* at Nasher Sculpture Center (October 2017–February 2018) further expanded this discourse by showcasing contemporary artists' engagement with paper as a significant sculptural medium. The featured artists – including Marco Maggi, Joshua Neustein, Nancy Rubins, and others – explored paper's versatility and strength beyond mere support for mark making. For example, Joshua Neustein's 'Paper Bales' (Fig. 22) reimagined paper in its raw bulk form, challenging perceptions of fragility and ephemerality by presenting it as monumental and enduring.

In summary, concepts of the body in recent photographic and curatorial practices reflect an evolved understanding of paper's materiality as a dynamic sculptural entity beyond its conventional passive role as a flat image-bearing surface. The next task is to scrutinise the conceptualisation and contextualisation of the body in photography scholarship and how this affects contemporary theory and practice. As a comprehensive account of the multifarious roles of the body in photography, the seminal study is Michelle Henning's 'The Subject as Object: Photography and the Human Body' (2015).

Henning's analysis identifies four key dimensions: *the photographed body* (the human subject/s captured in the image)<sup>22</sup>; the body of *the photographer* (including the camera as an extension of the physical and perceptual faculties)<sup>23</sup>; the body of *the viewer* (encompassing the embodied experience of engaging with photographic works)<sup>24</sup>; and the body of *the photograph* (referring to the material and physical properties of the photographic object). This last dimension seems most immediately relevant to my initial fieldwork observation of the torn and cut paper edges discarded during the operation of tearing, within photography's discourse on the body. Focusing on the body of the photograph and its materiality, this dimension is a critical aspect of photography scholarship.

Barthes' reflections on the physicality and mortality of photographs in *Camera Lucida* are foundational in this regard. Barthes ascribed these qualities of the photograph to '[the] *fate of paper (perishable), but even if it is attached to more lasting supports, is still mortal: like a living organism, it is born on the level of the sprouting silver grains, it flourishes a moment, then ages...attacked by light, by humidity, it fades, weakens, vanishes*' (1984, p. 93). These ideas are further developed in another seminal work, *Photographs Objects Histories* (2004). Edited by the visual and historical anthropologist Elizabeth Edwards and photographic historian Janice Hart, this collection of essays examines photographs as physical objects that occupy space and have texture, weight, and presence. For instance, in 'Ere the Substance Fade: Photography and Hair Jewellery' (Edwards and Hart 2004, pp. 32–46),

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<sup>22</sup> In her influential work *On Photography* (1977), Susan Sontag explores the photographed body, discussing the politics and ethics of capturing human subjects. Sontag considers the implications of turning people into objects for visual consumption and the ways in which photographs can serve as both an affirmation of identity and a potential violation of privacy.

<sup>23</sup> The idea of the camera as an extension of the photographer's body has been widely explored. In *Towards a Philosophy of Photography* (1983/2007), Flusser discusses the camera as a tool that extends the photographer's vision, allowing for a translation of the three-dimensional world into two-dimensional representations. This extension of the body enhances the photographer's perceptual capabilities.

<sup>24</sup> In her collected critical essays *Photography at the Dock* (1991), Abigail Solomon-Godeau reflects on the viewer's physical and psychological engagement with the image. Emphasising the active role of the viewer in interpreting the photograph and deriving meaning, she frames the act of viewing as both bodily and cognitive.

photography historian Geoffrey Batchen explores the intersection of photography and material culture, emphasising the tangible aspects of photographs as objects of memory and material presence.

These essays mark a profound shift towards an understanding of the photograph as a three-dimensional object rather than just a two-dimensional image. My initial fieldwork findings align closely with that emphasis on the body; in particular, the observed sculptural form of torn pieces of photographic paper foregrounded its physical dimension beyond the flat image-bearing surface. However, while these scholars focus on the materiality of the image, the present research addresses the material depth of aesthetic making/s beyond the photograph itself.

In summary, the practical discourse acknowledges that photographic paper can be seen as a dynamic sculptural material, and scholars refer to the multifaceted nature of the body in photography, encompassing the photographed subject, the photographer, the viewer, and the photograph itself. In relation to the photograph as body, theorists like Barthes, and subsequently Edwards and Hart, have directed attention to the material and physical aspects of photographs. Building on this contextual framework, the next phase of the present research focused on the material depth of photographic paper. During fieldwork at Nottingham Trent University's School of Science and Technology, the next case example involved the exploration of the torn edges of discarded paper as described below.

### **On the material depth of torn edges**

When the torn photographic paper debris generated during C-type printing revealed its three-dimensionality by 'standing up' in sculptural formation, the paper's edges also signalled its material depth (Fig. 23). These ragged edges that ruptured the seamless white surface were not straight, flat, or predictable; exposing the pulpiness of the paper's fabric, they drew attention to its material depth, which is barely visible to the naked eye.



**Fig. 23: Documentation of torn paper edge collected at Bayeux London.**

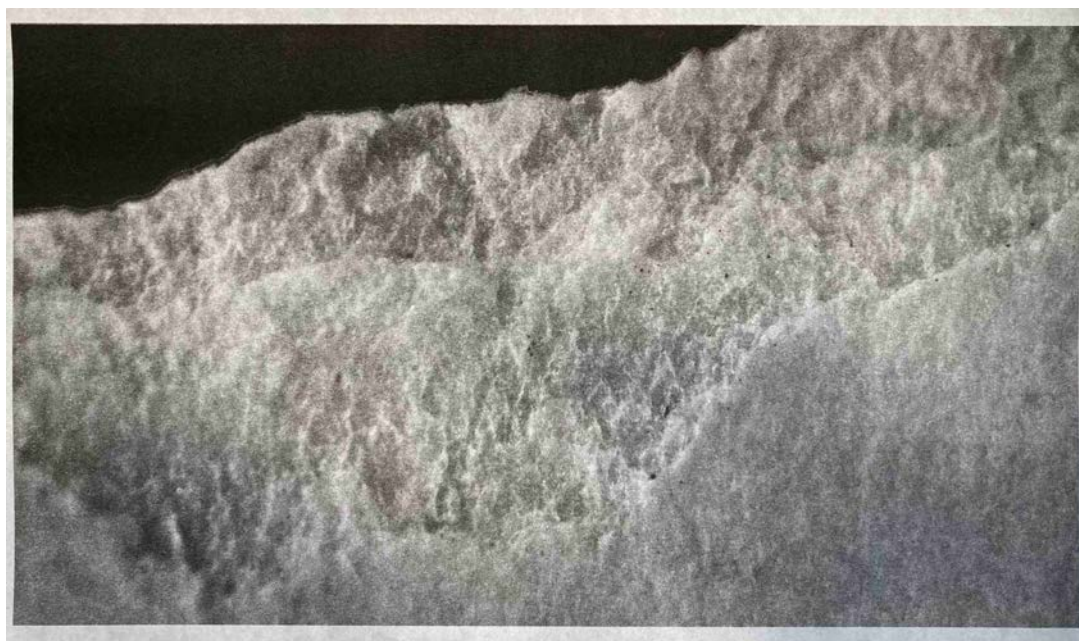
A promising first attempt to explore the material depth of photographic paper using macrophotography prompted further fieldwork. After extensive negotiations, Hahnemühle Germany (an international paper manufacturer of traditional artist papers, fine art inkjet papers, and speciality papers) agreed to let me work alongside the technicians in their laboratories, where scientists explore paper's materiality (weight, volume, texture, etc.).<sup>25</sup> However, although funding was secured, restrictions introduced during the Covid-19 pandemic meant that I could not travel, and the proposed fieldwork could not be initiated (either in 2020 as

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<sup>25</sup> Hahnemühle is renowned for its unrivalled expertise, skill, and dedication as a manufacturer of high-end paper. When I mentioned my visit to Fujifilm in Tilburg, this was waved aside: 'Frau Jaeger, man muss es sehen, um es zu verstehen' [...you have to see it for yourself to understand the difference between skilled manufacturing and industrial production].



initially planned or at any later point). Instead, I was granted access to the high-technology laboratory facilities at NTU's School of Science and Technology, where I worked with colleagues to explore the material depth of torn photographic paper.<sup>26</sup> Through the lens of a Zeiss light microscope, I was able to view the fabric and fibre of torn photographic paper's 'flesh' beyond what the naked eye could see (Fig. 24), prompting me to produce the artworks 'Groundless belonging' (Jaeger 2020) and 'Deep Matter' (Jaeger 2021).



**Fig. 24: 'Macro-Visions of the Unseen' [Light microscope image, risograph printed, 42 x 30 cm].**



**Fig. 25: Installation view of 'Deep Matter' (Andrea Jaeger 2021).**

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<sup>26</sup> Dr Muriel Funck (chemist and forensic scientist at The School of Science and Technology) provided access and support to enable me to use the light microscope (July 8, 2019).

In the artwork 'Deep Matter' (Jaeger 2021), three wooden-framed bookstands each hold a ream of 500 paper sheets with a photographic image on the open face (Fig 25). The three objects stand on a display plinth on backdrop paper; the respective images show close-up microscopic views of the highly textured fibrous edges of torn photographic paper. The wooden bookstands are angled and face in different directions, inviting the audience to move around and engage with the work from multiple vantages. The installation draws attention to the depth and physicality of the photographic paper and, in particular, the torn edges. The microscopic view reveals what lies beyond the two-dimensional plane of the photographic surface, drawing attention to the texture, layers, and corporeality of the paper's material depth. Evoking the form of a book, the use of wooden frames to anchor the images plays into the theme of exploring this tactile world beyond the visual. The three photographic objects capture the soft deep landscape of the torn paper hidden from the naked eye – photographic bodies that displace the conventional narratives of surface and image.

Beginning from the discovery of the sculptural qualities of photographic paper observed in a waste bin, this exploration of the materiality of photographic paper echoes the work of artists like Demand, Lovelace, and McCullough, who have looked beyond the conventional preoccupation with the image to foreground the physicality of photographic paper. While some scholars have also addressed the material and physical aspects of photography, discussion has centred primarily on the photograph. This case example unveiled the hidden material depth of photographic paper's 'body'; the next phase of this research again sought to exceed the visual domain by investigating the more-than-visual aesthetic making/s of sounds, bodies, and sensations elicited by the tearing of photographic paper during C-type printing.

## **Invisible material depths: Photographic sounds, bodies, and sensations**

This case example draws on insights from the exploratory study sessions *Tearing Paper* and *Deep Listening with Tearing*, as well as reflections on the production of the multimedia installation *a rip, a tear, a tenderness, a violence* (Jaeger 2022) and the scholarly discourse on the role of sounds in photography. Moving beyond the predominantly visual analysis of the initial research phase, this exploration embraced the tactile and auditory dimensions of photographic bodies as witnessed in the act of tearing.

In the two experimental study sessions described here, the performative artistic research methodology was inspired by the pioneering work of Barbara Bolt. Advocating more participatory forms of engagement with art, Bolt (2016) emphasises the importance of multisensory interaction with the materials and processes of artistic making. These ideas informed my in-depth examination of the intricate relationships between the sounds, bodies, and sensations associated with the tearing of photographic paper during C-type printing.

My efforts to explore the more-than-visual dimension of this tearing operation at Bayeux London highlighted the immediate limitations of the laboratory setting in this regard. Emphasising efficiency, the C-type printing process was perceived as a series of functional steps focused on the desired end product. This narrow perspective left little scope for a deeper multisensory exploration of the material's qualities, which the image technicians considered irrelevant or even absurd. Faced with these limitations, it became clear that a different approach was needed to facilitate an open-ended exploration of the act of tearing beyond its practical purpose and without dismissing it as mere destruction. To that end, I devised an experimental context to investigate the aesthetic making/s of bodies, sounds, and sensations during tearing.

## **‘Tearing Paper’ and ‘Deep Listening with Tearing’**

The experimental study session *Tearing Paper* invited participants to immerse themselves in the act of tearing photographic paper in an enclosed space while their actions were audio-recorded. This solitary exploration was designed to encourage participants to discover and articulate the sounds, textures, and sensations of tearing paper through hands-on interaction. The subsequent study session *Deep Listening with Tearing* built on this foundation by inviting participants to listen collectively to the audio recordings from the first session. This group activity introduced the technique of Deep Listening® – focused and active engagement with sound to enhance sensory awareness and a more profound connection with the auditory experience. Transcending conventional visual analysis, these experimental efforts sought to amplify the complex fusion of sensory, tactile, and auditory elements during tearing.

### **‘Tearing Paper’**

The *Tearing Paper* study session was designed to turn the act of tearing into an aesthetic experience beyond its routine function. According to Arteaga (2017, p. 24), aesthetic encounters of this kind engage sensorimotor skills and prompt novel and spontaneous responses to recontextualised environments involving collective agency. The session formed part of NTU’s Fine Art Research Residency (known as Summer Lodge) in July 2018. The primary goal was to encourage participants to engage with the tactile, audible, and physical experience of tearing photographic paper and to reflect on their experiences during or after the event. To facilitate unguided interaction with the material, each participant was offered an undisturbed space in which to explore the activity at their own pace. This open-ended experimental approach combined direct sensory and material interaction with dialogue-in-action, which proved to be an effective strategy. Audio recording was deemed minimally intrusive as compared to video recording or direct observation. A comprehensive

portfolio documenting *Tearing Paper* is available on the Research Catalogue and can be accessed by following this link: <https://www.researchcatalogue.net/view/603276/1036192/2537>.

### **‘Deep Listening with Tearing’**

The analysis of image documentation and participants’ comments during the critical evaluation that followed the *Tearing Paper* study session highlighted several methodological challenges for practice-led research. In particular, the need to capture the nonverbal aspects of human and non-human interactions underscored the importance of capturing the auditory dimension of photographic making. To that end, I devised a group listening session that leveraged the Deep Listening® method previously used to explore listening and touch.

The hour-long study-as-listening session *Deep Listening with Tearing* formed part of the NTU Research Encounters seminar on Artistic Methodologies on November 23, 2018. The eight participants were invited to listen attentively to one of the seven audio recordings from *Tearing Paper*, which included the movements and interactions of bodies, paper, and other elements, and to jot down their thoughts during or immediately after the listening exercise.<sup>27</sup> Based on the principles of Deep Listening (e.g. Lewis 2005; Gold 2018; Oliveros 2020) and guidelines for conversation analysis (Hoey and Kendrick 2017), the aim was to enhance participants’ auditory awareness of the material’s sonic environment. To that end, participants were asked to frame the sounds of tearing paper as the expressions of non-human agents, which helped to promote collective interpretation and material analysis of the audio recording without resort to a transcript. Although structured like a focus group, the session pursued collaborative understanding rather than open-ended discussion by inviting participants to contribute to and expand on shared insights to enrich the collective interpretation of the aesthetic experiences

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<sup>27</sup> All eight participants (six females and two males) came from a Fine Arts or Design background and were engaged in research. They ranged in age from 20 to 50 years.

in question. A comprehensive portfolio documenting *Deep Listening with Tearing* is available on the Research Catalogue and can be accessed by following this link: <https://www.researchcatalogue.net/view/603276/1036192/3553/802>.

The critical analysis synthesised materials from *Tearing Paper* and *Deep Listening with Tearing*, including transcribed comments, images, audio recordings, and memos, which were categorised as sounds, bodies, or sensations. This approach facilitated discussion of the multifaceted aesthetic dimension first noted at Bayeux London, referring to the sculptural quality and rich sounds and sensations of tearing as alternative aesthetic making/s.

The two study sessions illuminated the rich auditory dimension of the tearing operation, encompassing a wide spectrum that ranged from the subtle and profound ‘voices’ of paper to an array of noises documented as ‘high-pitched’, ‘deep’, ‘loud tears’, and ‘quiet soft rips’. Participants were supplied with headphones to enhance auditory attention, enabling them to attune more closely to this soundscape. As one participant observed, ‘*Hearing the sounds back through the headphones made me acutely aware of the sounds paper makes, as well as the interaction with the paper, revealing its material properties*’ (7-Hu 09:49). Attentive listening enabled the participants to discern a wider range of the sounds produced by tearing, including popping, shooting, and squeaking, as well as paper-specific noises like crackling and fluttering. These auditory experiences varied in rhythm and intensity according to the paper’s size and texture, deepening engagement with its material qualities.

The act of repeatedly tearing photographic paper facilitated tactile exploration, enabling participants to connect with the material body of the paper itself: ‘*Returning to the initial tear felt peculiar. The first sheets, marked with writing, now feel vastly different... With each subsequent tear, I became increasingly attuned to the nuances between various papers, their textures, and materials*’ (7-Hu 27:02). This observation aligns with Lange-Berndt’s thought about engaging with materials to grasp their agency and reveal their unexpected qualities

through thorough exploration of their properties (Lange-Berndt 2015). In the present case, for instance, participants noted variations in paper thickness, weight, and surface texture (ranging from 'slightly waxy' to 'glossy', as well as differing shades of white).

Marking a departure from the expected flatness of the photograph's surface, participants also noted sculptural qualities variously reminiscent of 'buildings', 'statues', and 'trees'. They also remarked on the paper's multidimensionality, including its back and front surfaces and the distinct sharpness and crispness of its edges. The observed sculptural formations included torn edges and collages of individual sheets, and the act of tearing was characterised as an interaction resembling 'two bodies meeting', generating a shared space between performer and paper marked by sounds and complex sensations that ranged from violent to tender and calm to chaotic.

These study sessions marked a deliberate shift of attention from the visual to the multisensory dimension of acts of tearing. In contrast to the image technicians' mechanical approach, the session enabled participants to engage more deliberately in tactile acts of tearing. This heightened awareness disclosed a hidden material dimension of unique textures and sounds in every fold, crease, and rupture. No longer silent casualties of the production process, the torn edges gained a newfound prominence. Ranging from the sharp staccato of a clean rip to the prolonged sigh of a jagged tear, their voices revealed a hidden landscape of sound. The operation of tearing – typically perceived as an endpoint or a by-product – was recast as a generative aesthetic act, producing photographic sounds and sculptural forms enriched by the paper's material complexity.

Sharing these insights posed a significant challenge: how to convey the tactile sensation and auditory nuances of tearing photographic paper in a form that would be both accessible and engaging. This led to a collaboration at the University of Nottingham's Mixed Reality Lab, culminating in the production of an immersive installation that combines soundscapes

and visual texture mapping. The resulting multimedia installation, entitled ‘a rip, a tear, a violence, a tenderness’ (Andrea Jaeger and Tom Harris 2022)<sup>28</sup> was jointly developed with Laurence Cliffe, a creative technologist and researcher, and the sound artist Tom Harris. It includes a soundscape by Tom Harris, which was inspired by the audio recordings from the *Tearing Paper* sessions. This sound element is complemented by photogrammetry-based texture maps that visualise the detailed surfaces and material depth of the torn photographic paper.<sup>29</sup>

The aim was to transform the dynamic action of tearing into a multisensory experience by dissolving the boundaries between hearing and viewing, but we encountered certain constraints in this regard. In particular, our attempts to develop a multisensory augmented reality space enriched with sounds and texture maps collided with the prevailing perception that sound is little more than an adjunct to photographic imagery,<sup>30</sup> echoing the scholarly discourse (Frohlich 2004, 2015; Edwards 2005; Martin 2012; Tanaka 2012; Campt 2017). Instead, we aimed to produce a space in which auditory and visual elements could coexist equitably. The compromise we arrived at was a fusion of sounds and visual textures that brings these sensory dimensions into closer proximity.

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<sup>28</sup> From August 2022 to August 2023, I was an artist-in-residence at the University of Nottingham’s Mixed Reality Lab as part of the EU-funded project Live, Experiential and Digital Diversification exploring immersive technologies and techniques.

<sup>29</sup> As one element of documenting the study session ‘Tearing Paper’, I assembled the paper debris from each session and placed the items next to each other. I then photographed each body of paper debris in two dimensions from a single viewpoint. In each case, the photograph fell short of capturing the object’s texture and depth. I then turned to photogrammetry, which stitches together multiple two-dimensional photographs from various angles to create a three-dimensional digital model in the form of a surface mesh; the texture of the physical object is stored as a separate two-dimensional image or ‘texture map’. After photographing each of the bodies of paper debris at least 200 times from multiple angles, I used the Metashape photogrammetry software package to generate texture maps for each object. (For an example, go to [Texture map of a paper debris object from the study session Tearing Paper](#)).

<sup>30</sup> Audio augmented reality simulates natural listening and a spatial soundscape to control how far and from which direction the sound travels to the listener (Cliffe et al. 2019).



## **Concluding insights on photographic materiality and sound**

A review of the role of the body in photographic scholarship and practice challenged the conventional view of photographic paper as a passive surface, revealing its potential for dynamic, sculptural expression. These ideas were further elaborated in the section *On the Material Depth of Torn Edges*, which describes how microscopic analysis uncovered a hidden realm beyond the torn paper's surface. The case example traced the journey from the initial encounter with the sculptural forms of torn and discarded photographic paper and the sounds and sensations that accompanied the operation of tearing, which is typically no more than a prelude to producing the final image. Instead, the study explored the associated sounds, sensations, and photographic 'bodies' as alternative aesthetic outcomes of the C-type printing process.

The next phase explored the multisensory experience of tearing in the study sessions *Tearing Paper* and *Deep Listening with Tearing*. These individual and group sessions confirmed that the act of tearing generates unique sounds and discloses the materiality and sculptural depth of photographic paper. From the subtlest whisper to the most resonant tear, the operation was experienced as a body of auditory textures, and the paper's physicality embodied a sculptural narrative far beyond its two-dimensional legacy. These multisensory encounters challenge the dominant visual paradigm and invite a performative approach that celebrates the full sensory spectrum of photographic making. Such an approach does not forsake the visual but enriches it with the material depth and dimensionality of tactile and auditory outcomes as alternative aesthetic making/s.

These findings inform an expanded conception of photographic practice as richly sensorial and deeply material. They suggest that photographic practice is not confined to the production of images but entails a complex choreography of alternative aesthetic making/s

that include sounds, bodily sensations, and the sculptural depth of the material itself. This highlights the limitations of conventional research methods that overlook the full spectrum of sensory engagement in photographic making.

The challenges of this phase must also be acknowledged – in particular, the attempt to convey the tactile and auditory richness of the tearing operation by creating a multimedia installation. Furthermore, although valuable, the insights gained here remain somewhat human-centred. To move beyond these limitations, the next case example explored aesthetic making/s beyond the visual and anthropocentric by investigating the role of more-than-human agency in photographic making/s. Focusing on the observed aesthetic event of cyan fogging, this shift represents a crucial step towards a more inclusive and diverse view of photographic practice.

## Case Example Three: Fogging

### *The making of non-images by more-than-human agents*

#### Introduction

In this case example, the observed aesthetic event – again at Bayeux London – was cyan fogging. Fieldwork at the laboratory revealed two contrasting perspectives on this event; while the image technician regarded cyan fogged artefacts as cast-offs, I discerned in them a soft aesthetic potential. In conversations, the technicians described cyan fogging as disruptive and inconsequential. Taking the opposite view, I produced the artwork ‘Light Kissing’ to foreground the unique aesthetic qualities of cyan fogged artefacts. However, as a significant non-human agent, the photographic printer Chromira’s perspective mattered, and this requirement informed a second phase of exploration.

That second phase examined the operational dynamics and material interactions involved in cyan fogging’s making, with regard to the role of Chromira. This was augmented by a historical analysis of more-than-human perspectives in photography scholarship, which traced the transition from predominantly human-centric narratives towards a greater acknowledgement of the role of technology in photographic making and, ultimately, of more-than-human agency. These disruptive moments observed during the C-type printing process expose the agential and material conditions of cyan fogging and contribute to an expanded understanding of the interplay of human and non-human agencies in photographic practice.

## Disruptions in the making of C-type prints

I documented the initial field observation of cyan fogging as follows.

*My first encounter with cyan fogging happens during my fieldwork at the Bayeux photographic laboratory London when a large-scale white piece of matte photographic paper shows a cyan ray of light in the most minimalistic vibrant way.*

*The piece is shuffled around on the big working table in the basement room. Next thing ... the image technician is reaching over the large paper veil with a cutter knife, ready to cut it into pieces. 'Please, no' I sigh, contorted with pain. The image technician pauses and looks up and across the table with a questioning expression. I explain that I am fascinated by the minimalistic subtle lightness presented here, and that I wish to preserve and understand what it is, how it happens, and so much more.*



**Fig. 26:** Fogged paper artefact generated by Chromira's sensor.

The aesthetic event of cyan fogging foregrounded two entirely distinct perspectives; while the image technician viewed the event as unintentional, accidental, and disposable, I felt a certain awe. The technician was surprised at my reaction and found it strange; I found his reaction tenuous in its disregard for the aesthetic value of any output of the C-type printing process other than the desired end product. This disparity prompted my investigation of cyan fogging as an aesthetic event, and I was supported by two technicians who agreed to collect all such artefacts over the course of a week. As well as acquiring multiple relevant instances, I had many further conversations with the image technicians about cyan fogging and the two conflicting perspectives.

To gain a clear understanding of the Bayeux technicians' perspective on cyan fogging, I recorded, transcribed, and analysed our conversations. They explained how cyan fogging occurs when Chromira – a large-scale LED photographic printer – unintentionally emits light onto the tensioned paper roll rebate that sits in the printing machine.<sup>31</sup> This is treated as a disruption of the printing process, and the exposed paper is discarded. The interview excerpt below illustrates the technicians' perspective on these productive conditions and the artefacts produced, which they routinely encounter. When I asked one of them *'What is going on here?'*, they shuffled the piece skilfully around on the laboratory's huge worktable to take a closer look.

*'What you see here', they replied, 'is fogged paper caused by a fine red light emitted by Chromira while resting in standby mode.'<sup>32</sup> In normal working circumstances, the paper is moving all the time – it doesn't get a chance to react. But if we leave it there for an hour or so, or maybe half a day, we're actually not*

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<sup>31</sup> In photographic terms, the rebate is the edge of a roll of film, from which no image can be developed.

<sup>32</sup> This section is based on a conversation about cyan fogging with an image technician at Bayeux London on September 10, 2019.

*printing anything (...) there's a little bit of light hitting it. But if we're using it reasonably constantly, that light never has a chance to expose ... the paper.*

One notable aspect of the image technician's account of fogging is the emphasis placed on the 'normal' flow of photographic production when 'the paper is moving all the time' to maintain the scheduled running order of the printing process. The fogged paper artefact happens when the flow of production comes to a standstill, and the paper is just sitting in the machine – in the technician's words, when the working conditions are not 'normal'. The fogging event unfolds during this gap in the otherwise continuous flow of production and is therefore seen as a deviant or disruptive element within that sequence.

The image technician went on to say that cyan fogging is an uncommon consequence of a tiny amount of light 'creeping in ... to expose ... the paper', which is 'touched' by it while sitting in idle mode. 'The paper will see that (...) red light (...) that doesn't generally affect it unless it's sitting in the same position for a long time.' The image technician's account emphasises that this only happens on exceptional occasions 'when Chromira is at rest ... with the loaded paper sitting in stillness, a minuscule red light will find a way to meet the paper'.

Framed by the image technicians as an unwanted event, cyan fogging is attributed to the printing machine's erratic doing, causing the paper to see a red light it is not supposed to see. Exposing the photosensitive paper in this way leaves a cyan streak on the fogged paper that is routinely framed as 'faulty'. However, as the image technician pointed out, the good news is that Chromira's faulty doing is inconsequential: *'It doesn't really affect us because it's, you know, down that rebate'*. The rebate (also called the leader) is the part of the paper roll that sits tightly around one of the drums in the LED printer's light-tight interior and is discarded once the printing process is completed. Regardless of cyan fogging, the leader and tail will be torn apart and thrown away as cast-offs after cutting the final print.

As cyan fogging affects only the leader and tail of the paper roll, the event is typically characterised as an *unintentional*, *inconsequential*, and *uncommon* occurrence that occasionally disrupts the flow of the C-type printing process. However, as noted earlier, the image technicians' perspective differed entirely from my own view that cyan fogging had aesthetic potential and, in the present context, invited further exploration. The next section traces the steps of that exploration from my perspective as a photographic artist.

### **One-off makings**

To investigate the aesthetic potential of cyan fogging, I produced the artwork 'Light Kissing' (Jaeger 2022). This multimedia installation features eight cyan-fogged pieces of photographic paper, which are placed in close proximity to expose the one-off quality of each piece as first encountered in the laboratory. The production of this work and the subsequent audience engagement served to confirm that, despite being generated by a repetitive process, each cyan-fogged artefact is indeed unique.

My exploration into the aesthetic potential of cyan fogging began when I encountered a large piece of matte photographic paper marked by a vibrant cyan ray of light at Bayeux. I was immediately fascinated by the minimalist elegance and subtlety of this non-image. The image technicians were amazed by my reaction to an artefact they routinely disregarded as a defect in the C-type printing process; rather than a defect, I experienced this as a significant aesthetic event. Our differing perspectives marked the point of departure for my inquiry.

At my request, two image technicians collected all further instances of cyan fogging over the course of a week, and our conversations continued throughout that time. They collected a further eight artefacts; after concluding my fieldwork at Bayeux, I placed the first one I had rescued from destruction on my studio wall. Loosely attached with bulldog clips, it curled up softly at the bottom end. Despite its large scale, it seemed to augment rather than occupy

the space – something I gradually realised after reading the piece again and again each day. This repeated contemplation of the cyan-fogged artefact brought me a first step closer to its aesthetic potential. However, the real turning point was a moment of revelation while comparing the eight cyan fogged artefacts on my studio wall. Although they had all been produced by the same process of light hitting photosensitive paper, the subtle cyan mark was unique in each case. As well as the varying shape and position of the marks, the paper strips and surrounding white space also varied in size, consolidating their uniqueness.

By observing the iterative quality of the repetitive act of making to understand the uniqueness of each piece, it became clear that a body of work could disclose the aesthetic making/s of cyan fogging, as the cyan marks would show up differently each time. The ‘Light Kissing’ installation of eight cyan-fogged pieces revealed this one-off quality. At this point, I invite the reader to engage with that work and the accompanying notes (explaining the title and framing) at [Research Catalogue exposition of Light Kissing](#).



**Fig. 27: Installation view of ‘Light Kissing’ (Andrea Jaeger 2022).**

As a next step in exploring the aesthetic potential of cyan fogging, I facilitated a study session in September 2022, focusing on one of the fogged pieces from the artwork ‘Light



Kissing' (Andrea Jaeger, 2022). For that session, I utilised the Visual Thinking Strategies (VTS) method.<sup>33</sup> I undertook VTS training during this PhD to enable me to facilitate multi-perspective readings of the artefacts encountered during fieldwork. The VTS method encourages open exploration of an image in a group setting without contextual influence. This was particularly useful for present purposes, as I was especially interested to know how an audience would react to cyan fogging as a form of aesthetic making.

When asked '*What is going on in this picture?*' (Fig. 27), audience members described a long narrow rectangle of white paper with a soft cyan beam of light melting away in the upper half of the image. This cyan colour trace was described as soft and subtle and occupying only a small portion of the white oblong. One member of the group found it fascinating that the work seemed to show almost nothing from a distance, but on coming closer, one discovers a smooth surface that invites one to touch it. Another person mentioned the palpable vibrancy of that cyan ray of light, and another commented on the curving surface of the photographic paper, which did not appear flat. On asking them to expand on that last comment, they went into further detail about how the piece was not fixed on a mount, or straightened, or parallel to the wall. Instead, it seemed to be floating freely, tucked in between an acrylic sandwich on the outmost upper edge. A follow-up comment pointed out that the minimalist mounting allowed the paper to curl. Noting its depth and the possibility of looking behind it, someone also perceived the work as a three-dimensional sculpture. One final comment characterised the work as minimalist and non-figurative; when asked to describe in more detail what they saw, the participant suggested that the almost untouched smoothness and whiteness of the paper was all that mattered. In other words, vision was voided, opening all the senses to a free exploration of what is going on in the

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<sup>33</sup> I facilitated the VTS session as part of the VTS Look and Listen Club, a monthly community group led by myself since 2021. This closed group has currently 10 members of female and LGBTQ+ identifying members from Algeria, Brazil, Germany, Mexico, Switzerland and UK ranging from the ages of 29-75. The session led on September 7, 2022 was an in-person event at Backlit Gallery Nottingham and attended by 8 members of the group. The session focused on one piece of the 'Light Kissing' series.

piece. The title of the work, display specifics, and project description were only provided at the end of the session.

By providing some useful insights into how an audience interpreted one of the cyan-fogged pieces from 'Light Kissing', the VTS session helped to advance the research by eliciting multiple perspectives on this aesthetic event. This engagement with the audience confirmed that the artwork evoked a range of sensory experiences and prompted a deeper appreciation of its minimalist aesthetic. The session also provided further evidence that, although produced by a repetitive process, each artefact is a one-off. In photography, one-offs are exceptional because they subvert the 'original-copy' paradigm in two respects. First, if a photographic print is the original rather than film material or a digital image file, it becomes difficult to produce copies of that original. Second, the C-type prints used in 'Light Kissing' were not copies or photographic representations of any external reality. Instead, these prints embodied their own making, producing a unique object in every case that escapes photography's primary concerns: representation and reproducibility.

While this exploratory multi-perspectivist inquiry confirmed the inherent one-off aesthetic potential of cyan-fogged artefacts as materialised outputs, it did not explore the operation of making from the perspective of Chromira, the photographic printer. This insight informed a second phase that shifted the focus to the intricacies of the cyan fogging operation itself. This included an in-depth examination of the methods and mechanisms at play, such as the functionalities of the Chromira printing machine, the red sensor light, and the response of the white light-sensitive photographic materials.

## The making of non-images

This open-ended exploration of cyan fogging confirmed that the productive conditions of this operation are typically viewed as disruptive and that the materialisations produced can be seen as one-offs. However, the primary focus on the materialised outputs meant that the operation itself remained uncharted. At this point, to deepen the investigation of making, I focused on the role of Chromira (the C-type printer) and the relevant materials to gain a clearer sense of the methods and mechanisms at play.

Underpinned by Petra Lange-Berndt's concept of 'following the materials' (Lange-Berndt 2015), this phase of the research elucidated Chromira's agency in cyan fogging as making. Aligning with scholarly accounts of the more-than-human in post-human photography (Flusser 1983/2007; Rubinstein 2016, 2018; Zylinska 2017), cyan fogging can be viewed as non-image making by more-than-human subjects.

Shifting the focus from the aesthetic manifestations of cyan fogging to a detailed analysis of its productive conditions served to illuminate the operational dynamics and material interplays of making, including the functionalities of the Chromira printing machine, the action of the red sensor light, and the response of the white light-sensitive photographic materials. This crucial deepening of the inquiry was informed by art historian Lange-Berndt's approach to material engagement (2015), which emphasises the active role and agency of materials in the interaction between materials and processes. Lange-Berndt contends that materials are more than their physical properties and that one must be aware of how they behave and interact within a given process – in the present case, how the photographic materials in question interacted with the operations of the printing machine (Chromira). It was important to explore this interaction as a complex interplay rather than a mechanical sequence. To track these processes and actions, and to attune with their 'vital materiality',

I consulted several sources, including general accounts of the fogging phenomenon and Chromira's troubleshooting manual.

In the documentation provided by the manufacturer of Chromira (ZBE Inc.),<sup>34</sup> cyan fogging is listed in the visual diagnostics section of the troubleshooting manual.<sup>35</sup> This lends support to the image technician's argument by framing the operation as 'trouble' that was not intended by the manufacturer. However, the image in the manual shows only an example of the visual mark and offers no further explanation (Fig. 28). The text below the image reads 'Linear Encoder Cyan Fogging', which seems to indicate a connection between cyan fogging and a linear encoder. The linear encoder is a sensor that enables Chromira's motor to maintain a precise linear path all the way from left to right and back again, enabling the LEDs to expose the photosensitive paper in seamless fashion. The linear encoder consists of an infrared emitter and receiver, and it is this sensor that releases the red non-image-forming light during latent phases of the C-type printing process, creating the effect known as cyan fogging.



**Fig. 28: Image of cyan fogging in ZBE troubleshooting manual (p. 35).**

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<sup>34</sup> ZBE Inc. is a multidisciplinary manufacturer of imaging, optics, motion control, and software systems based in Santa Barbara, California.

<sup>35</sup> ZBE Inc. Troubleshooting manual for Chromira Roll to Roll Printers: Version 3-2-1.

To delve deeper into the operational dynamics of cyan fogging, I looked at several definitions of the term in an effort to clarify its material qualities. According to one definition, cyan fogging is the ‘darkening or discolouring of a (...) print (...) by exposure to nonimage forming light’ (Modrak and Anthes 2011, p. 260). One notable feature of this definition is that the relation between light, paper, and exposure is described because of non-image-forming light, which differs from the image technician’s use of the term ‘unintentional light’. While both refer to the same outcome (fogged paper), the definition implies that ‘non-image-forming’ is a property of the light. It follows that if this property of the light is passed on to what it generates, that artefact (the fogged paper) is a non-image. Conversely, the image technician’s description of the emitted light as unintentional frames the operation as accidental and its consequences – including the fogged paper – as undesirable.

This further exploration of the operational dynamics and material interplay of cyan fogging raised an interesting question about Chromira’s role in the making of these non-images. Did it mean, for instance, that Chromira could be said to have *authored* them? According to media critic and philosopher Vilém Flusser, that is a reasonable inference. In his seminal work *Towards a Philosophy of Photography*, Flusser discusses the role of the photographic apparatus in the making of photographs. He attributes agency to the technical apparatus and the essential mechanisms that are ‘lying in wait for photography’ and ‘ready to spring into action’ because ‘their intention is (...) to change the meaning of the world’ (Flusser 1983/2007, p. 25). In the present context, this raises the question of what other photographic meanings might be ascribed to cyan-fogged non-images.

In attempting to explore these other meanings, it seemed important first to contextualise this notion of the ‘non-image’ in relation to the wider photographic discourse. As an aspect of photographic practice, the term ‘non-image’ typically refers to areas that lie outside the centre of the image (Modrak and Anthes 2011, p. 283). By labelling these marginal or

peripheral areas as non-images and suggesting that they have meaning and aesthetic significance, Modrak and Anthes challenge the traditional hierarchy of photographic composition. In similar vein, Laruelle (2015) argued that the term 'non-image' implies that the photograph and the photographed are one and the same, challenging the conventional notion of the photograph as a representation of the photographed. On this view, the idea that an image stands for or represents a reality is obsolete, calling into question the focus on the representational function in conceptions of photographic practice.

Despite these philosophical concerns, the concept of the non-image remains relatively unexplored in the broader photographic discourse, largely because theoretical discussion continues to focus on a) the relationship between the image and reality, and b) the interpretation of the image. In short, the prevailing emphasis is on how photographic representations are read rather than on how photographs are made (Wells 2015, p. 29). In this light, Laruelle's concept of non-photography stands as a radical critique of traditional photographic theory and practice. The term 'non-photography' refers to a way of seeing that looks beyond the limitations of human subjectivity and the photographic apparatus to capture the raw materiality of the world rather than a representation or an aesthetic object 'about' it. Laruelle's account aligns closely with the photographer and photo-theorist Rubinstein's (2016, 2018, 2020) 'post-representational photography', which rejects the model-copy-world-image paradigm by dissolving the relationship between the 'real' object and the image as a representation of that object. According to Rubinstein, a neglected dimension of reality can be discovered by moving beyond the representational dualism of image and world to explore the im/material processes that operate within and around the image (Rubinstein 2018, p. 106).

Building on these ideas, if cyan-fogged artefacts are not representations of an external entity, what else might the making/s of these non-images reveal? The photographer and

photo-theorist Gottfried Jäger, who has written extensively about the European Concrete Photography movement (2005, 2018), might argue that these artefacts show only ‘themselves’. Like Laruelle and Rubinstein, Jäger argues for a non-representational photography that emphasises its self-referential dimension. According to Jäger (2005, p. 11), self-referential images ‘only “mean” what is there, and to this extent (...) are opposed to an outside reference, the photographic normal case, where reference is made to objects that are not there’.

What, then, does the cyan-fogged non-image ‘mean’ in the context of ‘what is there’? To answer this question, it is important to understand that ‘what is there’ refers to photographs’ ‘use of their very own means and methods’ (Jäger 2005, p. 11). As discussed earlier, in the case of cyan-fogged artefacts, the relevant means are light and light-sensitive material; the method is the exposure of that material to the light, which fogs the leader and produces a non-image. The line of inquiry advanced by Jäger, Rubinstein, and Laruelle implies the attribution of vital agency to the means and method of making in cases of cyan fogging.

The idea that materials are alive and have a voice and agency that resonate with us has been advanced by thinkers like Jane Bennett (2010) and Judith Butler (2011) as central to the new materialist movement. Bennett is a renowned political theorist whose seminal work *Vibrant Matter* campaigns for vital materialism – the agency of non-human forces, objects, and things. In *Bodies that Matter* (2011) the philosopher Judith Butler explored two senses of matter: the material dimension of matter and the issue of ‘how matter comes to matter’. The significance of their work is that shifting the focus from the human experience of things to ‘things themselves’ exposes how matter comes to matter as more than a wilful human choice.

Considering these ideas, I wondered how the matter of light and paper mattered in the words of the image technician. A close reading of the transcribed interview material revealed

that the language seemed to imply the self-willed action of light and paper<sup>36</sup> – for example, the paper that *sees, sits, moves, or does not get a chance to react*; the *teeny tiny* light that *creeps in, hitting the paper but never having the chance to expose itself*.

The way in which the image technician's words 'vitalise' the materials involved in cyan fogging as a form of making links this framing of light and paper to the principles of new materialism. By acknowledging that light and paper are active participants in the operation of cyan fogging, these words unwittingly challenged the traditional view that places humans at the centre of material transformation. That anthropocentric perspective is rejected by the new materialist movement; within the wider post-humanist theoretical discourse, leading thinkers like Karen Barad (2003, 2007, 2012) and Rosi Braidotti (2013, 2019) champion the agency and vitality of non-human entities.

Post-humanist discourse critically examines the assumed superiority and centrality of human agency, arguing instead for a non-separatist view of matter. According to Barad (2007, p. 136), post-humanism 'doesn't presume the separateness of any-"thing"' and instead highlights the interconnectedness and active participation of all matter, human or non-human, in shaping realities. In *The Posthuman* (2013) and *Posthuman Knowledge* (2019), Braidotti makes a significant contribution to this discourse by arguing for a reconceptualisation of subjectivity and agency that transcends human-centrism. Specifically, Braidotti emphasises the need to rethink subjectivity in a way that is more inclusive of the non-human, asserting that 'Life is not exclusively human: it encompasses (...) forces, as well as geo- and techno-relations that defy our collective and singular powers of perception and understanding' (2019, p. 44). In acknowledging the co-constitutive relationship between humans and non-humans, Braidotti challenges the conventional

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<sup>36</sup> The German notion of 'eigensinnig' more closely captures the idea that the material makes its own sense (Schiesser 2008) without relating will and intention to a self as in 'self-willed'.



anthropocentric view of the human as the dominant force in interaction and knowledge production. Embracing the vitality and fluidity of matter, this post-humanist perspective informs a new understanding of the dynamics of cyan fogging, in which light and paper are not passive tools but active agents in the one-off making/s of non-images during C-type printing.

The image technicians' implicit acknowledgement of the active role of non-human agents in cyan fogging was an important turning point, confirming the relevance and utility of my approach. By embracing new materialist and post-humanist perspectives and looking beyond the end product of the C-type printing process to acknowledge the intertwined agency of human and non-human actors, the research moves beyond traditional boundaries. While contemporary thinkers have extended our understanding of photography to encompass the broader interplay of human and non-human elements in fluid im/material processes, this discourse remains largely conceptual and lacks the requisite applied dimension.

To bridge that gap, this case example demonstrates how practice-based research facilitates deeper exploration of aesthetic events by elucidating multiple perspectives. By attending to the conjoined roles of human and non-human agents in photographic production, the focus on making and matter strengthens the tangible dimension of post-human photography, enriching the conceptual discourse with applied insights.

### **The making of non-images by more-than-human agents**

This third case example offered insights into the productive conditions and produced materialisations of cyan fogging from multiple perspectives. Among the key findings, the image technician's perception of cyan fogging as a disruptive element of the production process highlighted periods of stillness and deviation from the 'normal' workflow, signalling a shift in the operational rhythm of photographic practice. The discovery that cyan fogged

paper artefacts possess unique aesthetic qualities as one-off non-images was also an important finding. Together, these findings indicate that both the processes and outcomes of cyan fogging diverge from the conventional objectives of photographic production, which typically focus on the seamless production of high-quality prints.

The role of more-than-human agency in cyan fogging and the production of one-off non-images has profound implications for our understanding of photographic practice and the prevailing emphasis on representation. The research journey progressed from the image technicians' perceptions of fogging as unintentional and disruptive to an exploration of non-images as manifestations of non-human agents that included the photographic printer, the red sensor light, and the photosensitive paper. This recognition of the active and vital role of non-human agents in the making of chromogenic prints challenges the traditional human-centric view in favour of a more complex and inclusive approach. By broadening the scope of inquiry to include the material and agential conditions of photographic making/s, the present research contributes to post-human photography. In the concrete example of 'Light Kissing' (Jaeger 2022), cyan-fogged non-images 'show up for themselves' and demand to be acknowledged beyond the confines of the representational paradigm, laboratory printing, and human-centric making.

## **Findings PART THREE**

### **Photographic practice:**

#### **Beyond the human, visual, and photograph-centric**

In this section, I discuss the implications of the present findings for the concept of photographic practice. Ranging from the development of an event-led research framework to the empirical discoveries related to tearing, tensioning, and fogging, the discussion addresses two overarching objectives: to shift the focus from the photographer and the photograph to the processes of photographic making; and to explore the aesthetic dimension of the observed materialisations and productive conditions within an event-led framework.

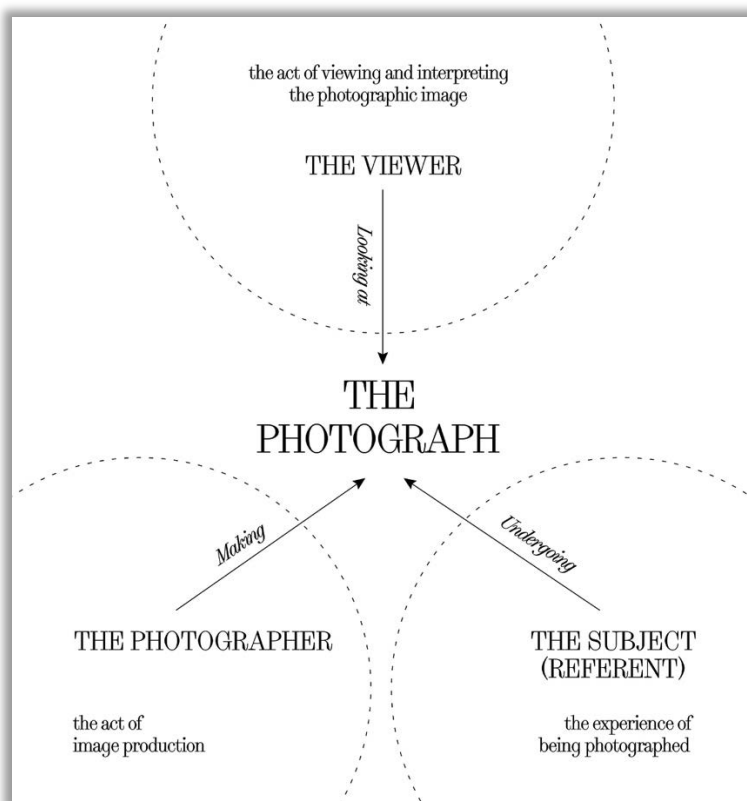
The present findings move on from Burgin's (1982, 1984) general concerns regarding the limitations of the dominant image-centric view of photographic practice. Based on my initial fieldwork, I developed an event-centric framework to explore the nature of photographic making in greater depth as a co-constitutive dynamic interplay of productive conditions and produced materialisations. As described in the case examples of tensioning, tearing, and fogging during C-type printing, these findings foreground the multisensorial, agential, and material conditions of production and emphasise the importance of tactile and aural practices, materials, and agents that are often overlooked.

The observed materialisations also highlight an aesthetic dimension in photographic production that is more-than-visual, more-than-human, and more-than-the-photograph. Taken together, these observations and framings inform an expanded concept of photographic practice that acknowledges its multisensory and aesthetic dimensions and the active participation of both human and non-human agents. This alternative conception of photographic practice looks beyond the photograph and what it represents to an event-

centric approach that comprehends the full range and dynamics of embodied and material interactions in the processes of making.

### Existing understandings of photographic practice

As outlined in Chapter One, photography scholars have yet to develop a shared or coherent concept of photographic practice. In the early 1980s, Victor Burgin argued that photographic discourse places undue emphasis on the photograph itself while neglecting the underlying practices. However, these insights remain largely undeveloped. Burgin's (1982, 1984) critique suggests that the prevailing focus on the photograph might obscure certain essential 'latent practices' – an idea echoed by Barthes (1984), who reflects on the triadic relationship of photographer, viewer, and subject that dominated contemporary conceptions of photographic practice (Fig. 29). As he is not a photographer himself, Barthes admits his limitations in exploring photography as making.



**Fig. 29: Barthes' triadic conception of photographic practice (Graphic by Andrea Jaeger).**

Wells (2015) noted that these conceptual issues are typically addressed in terms of the interpretation or 'reading' of photographs rather than their making. The wider discourse tends to focus on established photographers like Rineke Dijkstra, Wolfgang Tillmans, and Jeff Wall (Blessing and Phillips 2012; Dufour 2022; Tillmans and Eichler 2011) or on practitioners' 'how-to' accounts (e.g. Adams 1948; Modrak and Anthes 2011). However, despite Barthes' speculations and Burgin's critique, the issue of 'latent practices' has not yet been addressed in any depth. To address this gap, I chose to investigate the processes of photographic making at laboratories and manufacturing facilities rather than practices that are photographer-driven.

### **Photographic making as event**

The fieldwork element of this inquiry was conducted at Bayeux London and Make it Easy Lab Nottingham and at Polaroid Enschede and Fujifilm Tilburg. These explorations of the processes of making led to the identification of three distinct operations (tensioning, tearing, and fogging) that became the primary focus of this research. However, this approach also highlighted the challenges of capturing the 'something else' in photographic production – an aesthetic dimension that eluded verbal expression or capture by conventional means.

In an attempt to capture the dynamic interplay of these complex material and sensory interactions, I decided to move towards a non-representational event-centric methodology. The shift was informed by the ideas of Azoulay (2010) and Mackinnon (2016); these authors conceptualise photography as an event, emphasising its capacity to evoke a complex network of relations and interactions beyond visual representation (see also Findings Part One). Again, however, the photograph (rather than the process of making) remains their primary reference point.

During fieldwork, immersive engagement with the processes of making afforded me direct access to the interplay of materials, technologies, and sensory experiences that

characterises photographic production. Framing these processes as dynamic events involving both human and non-human agents enabled me to explore the implications of these productive conditions and material manifestations for understanding photographic practice beyond the photograph.

## **Productive conditions**

The case examples of tensioning, tearing, and fogging foreground the multisensory, material, and agential productive conditions that shape both the processes and outcomes of photographic production. The impact of these conditions extends well beyond the visual aspects of photography to the tactile, material, and interactive dimensions of making.

**1. Enhanced multisensory engagement.** Throughout the case examples (see Findings Part Two), specific qualities of the production environment facilitate enhanced multisensory engagement; for example, the darkness of the photographic laboratory during the tensioning process enhances one's awareness of touch and sound. Crucially, heightened multisensory engagement is known to deepen the experiential dimension of interacting with materials, which is commonly overlooked by visual-centric accounts of photographic practice.

**2. Hands-on material interactivity.** Activities that involve hands-on interactivity not only alter the material's composition but deepen the practitioner's sensory understanding of its properties. For example, tearing photographic paper challenges the conventional view of this material as a passive surface by revealing its dynamic and sculptural potential through direct hands-on engagement.

**3. The agential role of more-than-human subjects.** The introduction of more-than-human agents plays a critical productive role, as for instance in the case example of fogging. By disrupting standard operational rhythms, these non-human subjects shape the processes

and outcomes in question and challenge the anthropocentric view of photographic practices.

Attending to these multisensory, material, and agential conditions enriches our understanding of photographic production. The present findings confirm the importance of engaging with these visible and less visible materials and agents as observed in the case examples of tensioning, tearing, and fogging.

### **Produced materialisations**

Based on the case examples, it seems clear that produced materialisations influence conceptions of photographic practice. In support of that view, three key arguments in Findings Part Two address the predominance of the final image, the production of sculptural and auditory forms, and the emergence of meaningful non-images.

**1. The predominance of the final image.** The material outcomes from processes such as tensioning underscore the potential for non-visual elements to contribute significantly to photographic aesthetics. Challenging the prevailing focus on the visual, this invites an expansion of photography scholarship beyond purely visual analysis to a multisensory approach grounded in methods like Deep Listening

**2. The production of sculptural and auditory forms.** Beyond modifying the visual aesthetics of photographic paper, the act of tearing opens further dimensions of sculptural form and auditory texture. These alternative aesthetic productions challenge the conventional understanding of photographs as two-dimensional and invite a richer sensorial and deeply material conception of photographic practice.

**3. The emergence of meaningful non-images.** The non-images described in the case example of fogging are aesthetically significant materialisations that diverge from traditional photographic objectives. Characterised by one-off non-representational qualities, these

forms challenge existing norms by acknowledging the value of accidental and incidental events and more-than-human agencies as integral components of photographic making.

These findings support a more expansive conception of photographic practice that go beyond human-centric perspectives and the idea of the photograph as the sole output. Adopting a post-humanist approach that celebrates the role of more-than-human agents and multisensory aesthetics, this more nuanced conception moves away from conventional methods such as interviewing photographers or performing a semiotic analysis of their photographs.

### **An expanded conception of photographic practice**

Synthesising the insights of Burgin and Barthes and the findings of the present research, a more comprehensive understanding of photographic practice begins to emerge. Acknowledging his own limitations as a non-photographer, Barthes focused on the photograph itself as the central concern of photographic practice. His triadic approach centres on the activities of three actors (Fig. 32).

**1. Looking** refers to how *the viewer* interacts with and interprets photographs, emphasising the semiotic reading of the image.

**2. Making** refers to *the photographer's* creative and technical approach to making a photograph.

**3. Undergoing** refers to the photographed subject and the relationship between image and referent.

Barthes' analysis is rooted in the human-centric and visual-centric aspects of photography, emphasising the final photograph and its interpretation.

The alternative approach developed here shifts the focus from the photograph as final product to the processes and conditions of making within which photographic practices



emerge. This event-centric, multisensory, and more-than-human perspective finds empirical support in three observed practices.

**1. Tensioning** highlights the tactile and auditory dimensions of photographic production beyond the purely visual.

**2. Tearing** draws attention to alternative aesthetic makings like sculptural forms and auditory textures, again moving beyond the two-dimensional photograph.

**3. Fogging** foregrounds the role of non-human elements such as machines and materials in shaping the processes and outcomes of photographic production.

In acknowledging the dynamic material contexts in which the photograph is produced, the present research also draws attention to the aesthetic value of photographic events beyond the photograph and the dynamic interactions between human and non-human agents. This synthesis expands our conception of photographic practice and encourages deeper exploration of *the how and what of making*, moving from a product-centric to an event-centric view that addresses a wider array of sensory and material interactions.

## Chapter 4 SUMMARY AND CONCLUSION

In this practice research project, I set out to examine the processual and material aspects of photographic making in commercial settings, including laboratories and manufacturing facilities, which are often overlooked in photography scholarship. By shifting the focus to these sites of production, I aimed to challenge the prevailing emphasis on the photograph itself in photographic research and practice. I addressed two primary objectives: to explore the aesthetic dimensions of making beyond the photograph, and to examine the implications for conceptions of photographic practice.

The project makes four main contributions. 1) The theoretical review critiques the prevailing emphasis on the photograph, the viewer, and the subject, highlighting the neglect of photographic making and its co-constitutive dimension. 2) Through immersive inquiry in commercial settings, the project offers empirical insights into the often-hidden practices of everyday photographic production. The findings documented on the Research Catalogue Fieldwork exposition demonstrate how photographic making extends beyond words and visibility. 3) The practice-based approach to photographic making as an embodied non-representational event employed a novel artistic research methodology that reinforces narrative modes of showing, using multimodal exhibition and process expositions on the Research Catalogue platform. 4) The detailed case examples reveal the complex agential, sensorial, event-based, and relational dynamics of photographic making and how these produce networked aesthetic events of material, technological, human, and non-human agencies, enriching the concept of photographic practice beyond the conventional anthropocentric focus on the visual and the photograph itself. Before expanding on the specifics of each contribution, the following brief overview outlines the various components of the thesis submission and how they helped to achieve the research objectives.

## Thesis summary

The submission comprises three related elements: a written exegesis, the performance of artworks (exhibited as part of the examination process), and a digital portfolio on the Research Catalogue documenting the relevant aesthetic aspects of photographic practice. This multimodal form of presentation was devised to optimise engagement with the research findings, which elucidate the aesthetic dimensions of photographic making beyond the photograph. This allows the findings to be experienced as multisensory aesthetic events beyond the written word.

The written component of the submission clarifies the project's motivation, objectives, contextualisation, methodologies, findings, and contributions. The research was motivated in part by my fieldwork observations of the C-type printing process, which routinely features the sensual material event known as 'fogging'. My subsequent inquiries revealed that this repetitive process delivers aesthetic one-offs whose uniqueness expresses the sensuousness of the event itself.

In the opening contextual chapter of the thesis, I note the lack of published research on the sensory and material aspects of photographic making, echoing concerns expressed by Burgin (1982) and Barthes (1984) and subsequently by Rubinstein (2016) and Wells (2015). This deficiency is reflected in a narrow conception of photographic practice that centres on the photograph. To counter this narrow view, I developed a novel practice-led approach that redirects attention to photographic making in commercial production environments. The project then addressed the following overarching question: *'In photographic production, what else is aesthetically made beyond the photograph, and what are the implications for how we conceptualise photographic practice?'*

The second chapter (Methodologies and Methods) discusses the limitations of conventional qualitative research methods such as interviews, participatory observation, and audio-visual

documentation. The difficulties encountered during fieldwork confirmed the need for alternative methods if I was to engage with the intricacies of three operations observed during C-type printing: tensioning, tearing, and fogging. These operations exceeded the scope of a purely representational conception of photographic practice.

The third chapter (Findings) comprises three sections addressing the framework, findings, and conclusions. Azoulay's (2010) event-concept and the discovery of the production process's sensuous and aesthetic qualities informed the development of a framework for investigating photographic practices. Using this novel event-centric approach, my explorations of tensioning, tearing, and fogging extended beyond the visual to the multisensory; beyond the photographer to more-than-human agency; and beyond the photograph to the aesthetic realm of photographic making.

The concluding chapter of the thesis details the project's four main contributions as outlined above. Crucially, beyond the written thesis, this submission contributes to the wider discourse around photographic practice. The dissemination of findings is enhanced by a multimodal approach that includes an exhibition of produced artworks as part of the examination process, and a digital portfolio of aesthetic making/s hosted on the Research Catalogue. In combination with the written thesis, these components enhance the documentation and dissemination of the key findings. While the written thesis offers a comprehensive *telling* of the relevant theoretical frameworks, methodologies, and analytical insights, the sensorial and embodied aesthetic dimensions of photographic making could only be captured by *showing* the body of work and facilitating more direct experiential engagement. These alternative formats offer a tangible and immersive encounter with the invisible and ineffable qualities of these aesthetic events and practices, which defy conventional methods of documentation. This direct engagement with the nuances of aesthetic making extends beyond the limitations of traditional written accounts, facilitating

a deeper understanding of the complexities of photographic practice. More generally, the project makes the following conceptual, theoretical, and methodological contributions to research and practice.

### **Reframing photographic practice: Beyond the photograph**

This research advances the field of photography studies by shifting the scholarly focus from the photograph and the human-centric to the co-constitutive dimension of photographic making. Burgin (1982) noted but did not fully explore how the traditional emphasis on the photograph fails to comprehend the dynamics and ‘latent practices’ of photographic production. Extending Burgin’s critique, the present study examined photographic practices by exploring their material and procedural aspects beyond the usual focus on the final image. In so doing, the research addresses a critical gap in contemporary scholarship—a lack of attention to the actual making of photographs as articulated by Barthes (1984)—and proposes a new understanding of photographic practice beyond the prevailing emphasis on its end product. This approach also offers original insights into the aesthetic dimension of making as observed in the interplay of materials, technologies, and practitioners.

### **Empirical insights: The multisensory aesthetics of photographic production**

The fieldwork element of the present research initiated the in-depth empirical exploration of hidden and neglected everyday practices of photographic production in diverse settings, including Bayeux London, Make It Easy Lab Nottingham, and manufacturing facilities at Polaroid and Fujifilm. Direct access to these sites revealed the multisensory aspects of photographic production that defy ready description or capture by conventional means. To address this challenge, it proved necessary to look beyond traditional verbal and visual methods.

As part of the chosen solution, the findings are presented as a multimedia portfolio entitled *The Aesthetics of Photographic Production*. The portfolio is hosted on the Research Catalogue database, which is owned and operated by the Society for Artistic Research. This detailed and comprehensive online exposition offers an intimate look into professional production practices, revealing raw process-centred realities that are usually hidden from view and how their multisensory and aesthetic dimensions contribute to photographic making.

### **Integrating non-representational methodologies in photographic research**

To meet the challenge of elucidating processes that commonly elude conventional verbal and visual modes of representation, the novel methodology integrates a non-representational approach with artistic research methods in a deliberate move to foreground the embodied, sensory, and material aspects of photographic practice. This innovation is grounded in the view that the inherent performativity of artistic practices and their capacity to engender new ways of seeing can extend the scope and depth of inquiry beyond the limits of traditional methods such as participatory observation or qualitative interviewing. This innovative alternative approach includes methods like Deep Listening and Visual Thinking Strategies. Informed by a post-humanist paradigm that acknowledges the role of more-than-human agency, these methods provide valuable insights into the complex relational dynamics of photographic making.

The performance of produced artworks and the exposition of making/s and practices on the Research Catalogue prioritise experiential modes of showing. For example, the tactile artwork 'Touched and Listened with (leader and tails)' (Jaeger 2022) exposes the integral roles of touch and sound in the C-type printing process, which would otherwise remain invisible as operations and in the final print. In engaging with this artwork, the viewer experiences first-hand the hidden multisensory aspects of photographic production, made

manifest in the stack of once touched and tensioned paper strips. These innovations signal a paradigm shift towards a post-human non-representational approach that emphasises multisensory engagement with the material realities of photographic making.

### **Photographic practice beyond the visual, the human, and the photograph**

The case examples yielded novel insights into the C-type printing process, with particular regard to the operations of tensioning, fogging, and tearing. The observed interplay of agential, sensorial, and relational dynamics provides a more nuanced and comprehensive understanding of photographic practice beyond the prevailing visual- and human-centric models. By illuminating complex networks of material, technological, human, and non-human relations, the present research enriches Barthes' (1984) concept with its prevailing emphasis on the photograph and the human subject.

The case example on tensioning in the laboratory darkroom challenges the emphasis on the visual in photographic practice by foregrounding the critical role of multisensory engagement. Similarly, the tearing study shifts the focus from image production to the emergence of three-dimensional photographic objects and soundscapes, highlighting the active role of materiality in photographic practice. The study of cyan fogging inspired the artwork 'Light Kissing' (Jaeger 2022), confirming that each instance of cyan fogging is a distinct act that leaves a unique mark on the photosensitive paper and acknowledges the role of more-than-human agency in what is typically viewed as an accidental or unwanted outcome.

This event-centric approach foregrounds the sensory and material dimensions of photographic making/s. Rather than focusing on the photograph as the only valued outcome, this expanded view encompasses the full range of dynamic relations in the production process, including the role of non-human agency. By valuing the unseen and the

tactile as much as the visible, this more inclusive understanding enriches the conception of photographic practice.

## **Research impacts**

Building on the ideas of Edwards (2008) and others, the present research moves away from the traditional emphasis on visual analysis of the end product in favour of an event-centric view of photographic making. By directing attention to the multisensory aesthetics of photographic making and the role of more-than-human agency, this alternative approach challenges the dominant narrative and has important implications for photography education, research, and practice.

In this study of photographic making, the challenges of capturing the invisible and ineffable qualities of aesthetic events highlighted the limitations of conventional qualitative methods like interviews, participatory observation, and audio-visual documentation. The development of novel methods for praxis research (such as Deep Listening) is likely to require interdisciplinary collaboration. The dissemination of such findings is equally challenging, and the bricolage approach developed here confirms the utility of embodied engagement and ‘showing’ strategies to complement and augment verbal ‘telling’ forms of exposition.

For educators, this research highlights the importance of developing a wide range of sensorial skills through hands-on experiential learning. Proposed activities include the following.

- Field trips to exhibitions and collections to engage with photography’s materiality through multiple senses.
- Hands-on workshops to explore the agency of the photographic apparatus.



- Audio-visual projects that explore the synaesthetics of sound and image in photography by providing hands-on multisensory experiences.

By incorporating non-visual elements that extend photography education beyond the traditional bounds of visual culture, students can be encouraged to explore novel intersections and forms of engagement with the medium that reframe photographic making as a complex sensory experience.

### **Limitations and challenges**

One of the inherent challenges of practice-based research is the issue of affordability when engaging directly with commercial actors. The financial support I received from the AHRC Midlands-4-Cities research scheme covered travel and accommodation expenses for on-site visits. This support was invaluable at a time when research funding is increasingly scarce and represents a significant obstacle for many such endeavours. A related challenge is the difficulty of gaining access to the preferred research settings. For example, after a year of discussions, Fujifilm Netherlands consented to a one-day guided tour but declined my request for any further on-site research activities. While the longer duration of a part-time PhD facilitated lengthy negotiations with potential field partners, the risk of failure remained ever-present. Some obstacles are beyond one's control; for example, the unforeseeable Covid-19 pandemic entirely derailed a planned and funded field study at Hahnemühle in Dassel, Germany. These and other obstacles can make practice research difficult, and even with access and funding, the researcher must be able to adjust the study focus as necessary.

While the three case studies presented here may not support any more general conclusions, it is important to note that the project was exploratory and sought only to establish a conceptual and methodological framework. In particular, by shifting the emphasis from the interpretation of photographs to a more immersive engagement involving 'feeling' and

‘listening with’, it was possible to capture and communicate three hidden but essential operations at the heart of photographic production. This combination of exploratory fieldwork and experimental artistic inquiry shows promise as a first step towards a fuller understanding of the multisensory and aesthetic dimensions of photographic practice.

### **Future lines of inquiry**

Building on the present practice-based approach, future research should aim to deepen and expand the conceptual, theoretical, empirical, and methodological range of these findings. To begin, it would be useful to expand the scope of the research by investigating how the diverse array of photographic tools and technologies and their evolution over time – from vintage cameras and darkroom techniques to digital imaging and computational photography – have shaped the aesthetics of photographic making.

It will also be important to experiment with more-than-visual methods such as Deep Listening as a means of developing a fuller sense of the multisensory aspects of photographic practice. By engaging all the senses, this more embodied and immersive approach can be expected to yield novel insights into the network dynamics of practices, agents, materials, and tools. This more holistic view of the experiential and performative dimensions of making photographs should also illuminate the role of more-than-human agency in the photographic process.

Finally, future practice-based studies should develop and promote methods of dissemination beyond the conventional forms of verbal narrative. As explored here, alternative formats such as multimedia exhibitions, interactive online platforms, and collaborative workshops are useful ways of deepening engagement. By reaching a wider audience beyond the academic and practitioner communities, this experiential emphasis should foster richer dialogue and diverse perspectives on photographic practice and, more generally, on how knowledge is constructed, shared, and experienced. Building on the

present research, these lines of inquiry will inform my future work. By embracing these diverse paths, I hope to contribute to a more nuanced understanding of photographic practice and a dynamic and performative photographic culture.

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