Pulpy Pedagogies: Following the Paper Trail in Art Education

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ABSTRACT

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Alex Noel

What is the pedagogical value of making something? Historically speaking, "making" things has been a fundamental and necessary part of daily life, but the modern convenience of technology has allowed us to bypass many of these previously embedded processes. While the normative view of art education is virtually synonymous with making, in practice there is progressively more emphasis directed towards conceptual development. The following text is an account of my wayfaring journey through reconnecting with material practices as a way to identify their continued value and relevance to art pedagogy. Through a descriptive account of learning "from within" practice, I illustrate the generative potential of papermaking, and—more generally—making things. Furthermore, I offer a novel approach to research-creation through the practice of hand papermaking. I conclude by raising ethical concerns regarding material practice and considerations for future research trajectories.

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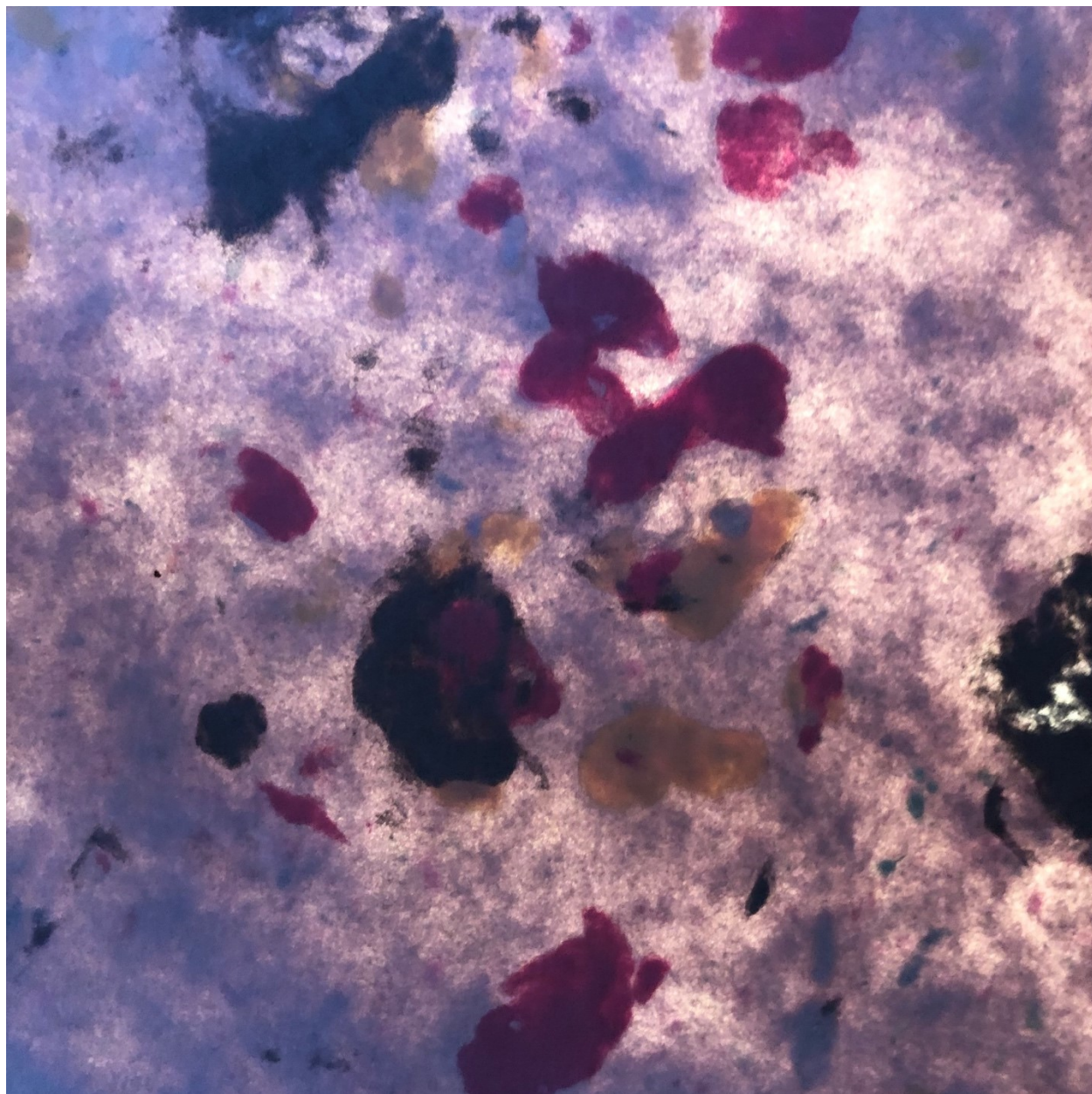
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To my grandmothers,
for offering those early teachings about making
making things, making time, making do.

Note. Illuminated paper material. [Digital photograph].

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Chapter One

How should we take account of, question, describe what happens every day and recurs everyday: the banal, the quotidian, the obvious, the common, the ordinary, the infra-ordinary, the background noise, the habitual? How are we to speak of these 'common things', how to track them down rather, how to flush them out, wrest them from the dross in which they remain mired, how to give them a meaning, a tongue, to let them, finally, speak of what is, of what we are? (Perec, *The Infra-Ordinary*, 1973)

1.1 Introduction

What is the pedagogical value of making something? Historically, "making" has been a fundamental aspect of art education and—more broadly—daily life. However, in recent years there has been a noticeable shift away from making and material practices. I surmise that the pedagogical value of "making" and "material practices" in art education is being undermined by the rampant neoliberalism within the contemporary art academy, accompanied by the widespread proliferation of digital technologies. Against the backdrop of our current social, political and ecological context, I contend that making and material practices have never been more relevant.

In art education, the shift away from making and material practices is often associated with the notion of "deskilling." However, as John Roberts, Professor of Art and Aesthetics at the University of Wolverhampton argues, an evolving definition of skill has been central to the historiography of art (Roberts, 2010). For example, he writes of the early 19th century French modernists who challenged the parochial vision of painting—ascribed by the academy and salons—and thereby, the very notion of "skilled" painting. These early modernists levelled this challenge through the embrace of "a 'semi-disorganised' pictorialism, the representation of divers themes and non-bourgeois types, and an indifference to coherent modelling of form and the production of convincing illusion" (Roberts, 2010). Roberts goes on to describe this approach as a "deflationary logic," wherein the artist negates inherited artistic frameworks to "assert themselves in defiance to tradition." In his view, this is the determining framework of art. Therefore, importantly, "deskilling" is not a recent phenomenon, nor is it indicative of a lack of artistic rigor. Rather, "deskilling" has been historically significant, if not central to, the evolution of artistic practices.

Ultimately, the early French modernists challenged the conventions associated with form and representation; in fact, these formal transformations are tantamount with the legacy of

modern art. However, these artistic practices were still grounded in the medium of painting. Later developments in the history of art would call into question the very basis of practice, by destabilizing modalities of production and scrutinizing the notion of the "art object" altogether. As Roberts (2010) argues, the 20th century inauguration of the Duchampian "readymade" would usher in an approach to art based in "the intellectual demands of re-contextualising extant objects in order to change their sign-value" (p. 83). Therefore—and what is of tremendous significance to my research—the deflationary logic of the readymade induced a "dismantling of the metaphysics of the hand and eye" (Roberts, 2010). From this historical vantage point, moving from the readymade to subsequent deflationary postmodern movements wherein "the artist adopts a conceptualising role, directing the labour and technical accomplishments of others, without actually directly manipulating any materials himself" (p. 84) appears as a natural progression. However, as I will argue next, these transformational shifts that have been naturalized within the art historical canon were not entirely innocent or radical.

The influence of the private sector over the so-called art world and the cultural realm writ-large, particularly since the 1980s, has been well documented and discussed (see Sholette, 2000; Wu, 2002; Carr & Gibson, 2015). From my perspective, the "make it new" impulse that began with the modernists and continued throughout the history of art (Roberts, 2010), cannot be separated from the prevailing logics of the market. Even the ability of the early French modernists, described by Roberts (2010), to adopt an unconventional approach to painting was contingent on forming an allegiance with the then-emerging private art market.

Since then, private sector influence over the art world has only intensified, particularly after the 1970s when the political project of neoliberalism began to take hold of the global economy (Sholette, 2000). Gregory Sholette, professor of studio art and the co-director of the Social Practice Queens MFA concentration and certificate at Queens College CUNY, has written extensively on the topic of capitalism and the contemporary conditions of artistic practice. He argues,

> Privatization and the "new" economy also have other, more immediate consequences for artists who continue to think of themselves as autonomous producers making work for galleries and museums. For one thing, expanded work schedules (in those other paid jobs that support one's artistic career) simply allow less time for making art. This might be seen reflected even in the choice of materials contemporary artists employ. Think of easel painting, modeling in clay or casting in bronze. During the early twentieth century these

were overpowered by more direct methods of art making such as collage, photography, steel welding and assemblage. As life (and production) speeds up, time consuming methods are broken down or eliminated. Today, even these relatively instantaneous techniques for producing art require quantities of time beyond the means of most artists. (Sholette, 2000, p. 8)

Rather than just "chalking it up" to the intellectual pursuits of the rebel artist, Sholette makes a compelling argument for how contemporary socioeconomic conditions might influence the practices of artists. When framed in this manner, it is abundantly clear why artists—particularly the young and precarious—would gravitate to more "conceptual" artistic approaches that require modest, if any, upfront investments in materials or infrastructure, and far less in terms of dedicated production time as well.

In the context of art education, similar trends are recognizable. As Steven Henry Madoff writes in the introductory chapter of the seminal *Art School: Propositions for the 21st Century* (2009), the "influence of conceptualism has affected art schools all over the world [...] the supremacy of the expression of a concept in this post-Duchampian epoch rides across all material means" (p. x). Today, art educators place more emphasis on conceptual practices than on practical hands-on training and transmission of craft skills (Lindstrom, 2005). Some art educators even believe that conceptual development is akin to creativity, while skill and technical development is incompatible with—or even a barrier to—creativity (Mason, 2019). While material practices still play an important role in art education, learners are often expected to justify creation on an "intellectual basis" (Pujol, 2009).

While I am certainly not a proponent of anti-intellectualism, the emphasis on conceptual justification has important implications for how we conceive of material practices in art education. The idea that making things is reducible to a rational explication denies such processes of much of their power. Reducing art to a conceptual or signifying practice marginalizes the tacit and embodied knowledge that is central to making. As I will argue later, the notion that conceptual development should take priority over making, is based in an ideological framework—emblematic of Western education—contingent on the metaphysical separation of mind and body, where the former takes precedence over the latter.

Furthermore, as with the case of the "art world" proper, the "new" economic order has created a particular set of conditions within the education system as well. Neoliberalism has been characterized as the "extension of market-based competition and commodification processes into

previously insulated realms of political-economic life [that have] accelerated, and intensified in recent decades" (Brenner, Peck, and Theodore, 2010, p. 329). In education, neoliberal policy has paved the way for a very particular ethos of marketization, which has impacted every aspect of teaching and learning. According to educational policy experts, Mark Olssen and Michael A. Peters (2005), in the neoliberal framework, "education is represented as an input-output system which can be reduced to an economic production function [wherein] one of the major objectives [is] to install relations of competition as a way of increasing productivity, accountability and control" (p. 326). However, what Olssen and Peters (2005) regard as the "most significant material change" under neoliberalism is the rise of "knowledge as the new form of capital" (p. 330) or what some refer to as "knowledge capitalism." Under neoliberal policy, the role of education shifts from a "public good" to the "creation of human capital and the production of new knowledge," with a focus on developments in science and technology as the drivers of innovation and thus, economic growth (Olssen & Peters, 2005).

Alongside of education's divestment from practices of "making," there has been a significant investment in new technologies. In fact, the use of digital technologies in the classroom has become rather commonplace. Art education, too, is rapidly adopting new media technologies into the curriculum (Chengyi & Qunying, 2018). It is interesting to note, as well, the resonances between digital art—which is often described as "immaterial" (Paul, 2015) —and the conceptualist orientation to art education. While there is no doubt in my mind that digital technologies offer fertile ground for artistic exploration, they also raise questions about the future of art education.

In a later section, I will elaborate on the topic of digital technologies in a pedagogical context and discuss some of the problems that occur when they are used as a substitute for analog processes. It is also necessary to acknowledge inextricable link between digital technologies and neoliberalism in education (Olssen & Peters, 2005; Selwyn & Facer, 2013). In the introductory chapter *to The Politics of Education and Technology,* authors Neil Selwyn & Keri Facer (2013) argue that despite the ubiquitous presence of digital technologies in education, the scope of available scholarship on the topic is limited. They write,

> [it is] often concerned primarily with matters relating to individual behaviours, individual development, and classroom practice. The predominance of these concerns has led to a rather restricted view of technology use led by enthusiasms for social-constructivist and sociocultural theories of learning. This tends to offer a very localized concept of the

"social" contexts in which technology is used. Indeed, it could be argued

that…educational technology is an area of academic study that remains stuck stubbornly

in its ways—dominated, at best, by an optimistic desire to understand how to make an

immediate difference in the classroom, and at worst, in thrall to technicist concepts of

"effectiveness," "best practices," and "what works." (Selwyn & Facer, p. 2)

Almost a decade after they write this, there remains a noticeable gap in comprehensive research related to the questions of "why" and "how" digital technologies are being used in education (Selwyn & Facer, 2013). However, although not clearly defined through research, the links between neoliberal education policy and digital technologies are evident.

In a Canadian context, there is an undeniable emphasis on digital technologies in the arts within higher education; a quick perusal of the federal research funding agency, the Social Sciences and Humanities Research Council (SSHRC), will confirm this. Alongside the emergence of the "digital humanities," the phrase "my work is at the intersection of art and technology" has become somewhat of a cliché in artist statements and artistic research proposals, as projects that incorporate digital media have a tendency to be prioritized over more "traditional" forms of art (Allington, Brouillette, & Golumbia, 2016; Chun, Grusin, Jagoda, & Raley, 2016; Manning & Massumi, 2014).

Along with research, neoliberalism has even impacted our institutions at the level brick-and-mortar. For example, I argue that the precarious state of the teaching studio in post-secondary fine arts education has likely suffered under neoliberal management culture. On this topic, art educator Ian Heywood (2009) writes,

the teaching studio […] has become a problem, under threat physically, ideologically and

administratively. Many art department studios have been around for the best part of forty

or fifty years […] yet there are few places where the resources that once underpinned

them—technical and teaching staff, workshops and material provision, and the amount of

space per student—have not been subject to years of cuts. Even some teachers and

managers now see them as expensive, dated and unnecessary. Small wonder that

questions have arisen about the sustainability of the studio, and whether it should be

replaced by some other kind of learning space. (p. 195)

Real estate is at quite a premium within higher education and studio space is no exception. Further to this, the emerging "post-studio" discourse (Hoffmann, 2012)—the idea that the traditional artist studio is defunct, as it no longer aligns with the needs of contemporary artists

that are progressively working within a conceptualist framework—has rendered the notion of the teaching studio as antiquated. For university administrators dealing with funding cuts, failing infrastructure and the pressure to remain "competitive," this is a marriage of convenience.

For some, the influence of the market on artistic practices has often been seen as an opportunity for artists to secure their place in the "future" economy (see Alexenberg, 2008). With that said, I might be so bold as to suggest, that what is good for business is not necessarily good for art education. In fact, I would argue that art education would do well to create some distance between its practices and those of the art world. As an art educator, I am not interested in "reproducing the cultural capital associated with fine art" (Sholette, 2000). This approach is ultimately beholden to the markets, which offer us few opportunities—if any—with regards to improving our contemporary condition. I am hesitant, even, to use the term "art," as I do not wish to associate with the baggage that accompanies that word, including its market-oriented logic. Therefore, in place of the term "art," I will use "making" and "material practices" to denote the material processes that are associated with art, but also extend beyond it. What interests me as an art educator is the potential that material practices—simply, "making things"—hold for individual and collective transformation. This "transformative capacity" is what art educators Anna Hickey-Moody and Tara Page (2016) describe as the "pedagogy" of matter. Simply put, what can we learn through making things and how can this help us to conceive of a better future? This is a weighty question and an urgent one, given the political and ecological conditions of the current moment.

The following text is a meandering account of my personal journey of/through reconnecting with material practices, while also attempting to identify their continued value and relevance to pedagogy in the 21st century. This exegesis serves as a complementary component and extension of my studio explorations in papermaking. Over the last six months, I dedicated myself to learning the practice of hand papermaking, a process that was completely unknown to me at the outset of this research. Taking up this material practice from the perspective of an autodidact has given me particular insight into the continued value of hands-on learning through making. It has also allowed me to probe the depths of my own assumptions about artmaking, destabilizing some of my core beliefs about art, making and pedagogy. In this sense, making was a transformative experience that allowed me to reorient myself to the more-than-human world with newfound sensitivity.

1.2 Situating myself

I was raised in a papermill town in Ktaqamkuk/Newfoundland. Since it was established in 1923, generations of my family have found work at the mill. I, too, held a summer job there as a teenager. Many years after leaving that town, the papermill serves as a method of loci. Writing this text, almost 2,000 kilometers away in Tiohtià:ke/Montréal, I can vividly recall the stench of sulfur and the hollow sound of the noon whistle.

Reflecting on the personal significance of my encounters with paper, it is no surprise to me that I have ended up here—more than twenty-five years later—contemplating the material of paper and the process of papermaking. My earliest memories of artmaking are related to the papermill. In the early 90s, my paternal grandfather often brought home rolls of newsprint to use as kindling for the woodstove. Worthless enough to burn. This newsprint eventually became my primary artistic medium: it was in endless supply, allowing me to draw as much as I wanted (a lot). As a child, not yet of school-age, I considered it my job to fill these enormous pages. I worked furiously, often with nothing more than a standard HB pencil that would gouge the sheet. But I was unbothered when something went awry during the drawing process. For me, the reward was to begin anew, with a fresh sheet. I was never precious about the finished drawings; they eventually became kindling, too.

Paper is a ubiquitous material not only in art education, but the world at-large. We are swimming in heaps of it all of the time—global paper consumption is estimated to be around 398 million tons per year (Solisco, 2017)—but it generally goes unremarked on. In art education, too, paper is one of the most frequently encountered and abundant materials. However, material of paper is generally not considered to have the seductive allure of paint, for example. By extension, the practice of papermaking is not associated with the same "prestige" as painting within the fine arts academy. In my own experience—as a student—I was not introduced to the papermaking process over the course of my fine arts degree. Furthermore, I would argue that the exclusion of paper within the fine arts curriculum of my university shaped my attitude that papermaking practice was an outmoded artistic process—a forgotten trend of the do-it-yourself culture of the 70s—irrelevant to contemporary artistic practices.

It was at the intersection of abundance and absence, where my interest was captured. As I climbed the rungs of post-secondary education—from BFA, to B.Ed and eventually to graduate school—what struck me was how my learning was becoming progressively divorced from material practices. Since commencing my graduate studies at Concordia, I have watched the

"graduate studio"—a dedicated multipurpose space for graduate students in art education, where many of my colleagues would conduct their artistic endeavours—be transformed into a high-tech seminar room, where "messy" artmaking is not permitted.

Personally speaking, the absence of making and material practices was significant because it corresponded with a lack of pleasure. I was painfully aware of the absence of joy that I had found through making in the early years of my education. Growing increasingly dissatisfied with my educational experience, I knew it was imperative for me to reconnect with my love of materials and making: the things that had compelled me to pursue a post-secondary education in the first place. But more than just being driven by the desire of personal fulfillment, this research is also hinged upon the belief that art education should be grounded in a paradigm of artistic practice (Sullivan, 2006) where the "work of art," and not the "artwork" (Bolt, 2004) is the cornerstone of pedagogy. From my perspective, art education is at its best when art is not used as a tool in the pursuit of outcomes, but when art is a centred as an ongoing practice that is emotionally and spiritually fulfilling.

One final note to conclude this introductory chapter: I want to acknowledge the ongoing global health crisis and the challenge of doing research at this current moment. The unprecedented circumstances of the COVID-19 pandemic effected all sectors, including post-secondary education and research. Undoubtedly, this situation has altered the course of my research trajectory, namely due to the immediate shutdown of the university in March 2020, following the rapid escalation of the viral outbreak here in Montréal. While my research was primarily studio-based, this solitary approach was not entirely taken of my own volition and is not my ideal model for learning. Given different circumstances, I would have sought out more in-person and collaborative methods of engaging with the hand papermaking process. That said, during this time I did have the opportunity to "virtually" meet with Montreal-based fibre artist, Sarah Bertrand-Hamel, whose work is a great inspiration and who very generously shared her papermaking expertise with me.

Finally, I would be remiss not to address the ostensible contradictions of advocating for an approach to art education that appears to disparage digital technologies, during the time of coronavirus. COVID-19 has certainly pushed teaching and learning even further into the digital realm, with many post-secondary institutions in Canada opting to move to online course delivery for the foreseeable future. The popular discourse at this moment in time is that online teaching and learning is *the* way forward for education, post-coronavirus.

The utility of networked digital technologies as a tool for mitigating issues related to physical distancing during the initial viral outbreak, is by no means lost on me. As previously mentioned, it helped to facilitate some of the conversations that were foundational to my research. However, with that said, I am weary of accepting online learning as the only way forward for education in a post-coronavirus world. In fact, what this pandemic has affirmed for me is that material modes of learning are more important than ever. For one, the ecological issues intertwined with the emergence of coronavirus pose urgent questions regarding how we might educate towards environmental stewardship. From my perspective, this type of learning cannot be accomplished from behind a computer screen. It will require a transformative approach that is grounded in a materialist framework, where outdoor and traditional land-based learning takes precedence. Furthermore, learning in an open-air environment is also conducive to the physical distancing requirements observed in many jurisdictions.

While COVID-19 has raised many questions about the future of education and research, one thing seems certain: we must break with the status-quo. I believe there has never been a more opportune time to reimagine our education system. For this reason, I am looking forward to continuing this work during my doctoral studies, which will commence as of September 2020. With this on the horizon, I feel both hopeful and grateful: hopeful that this moment of crisis will serve as the catalyst for sweeping change and grateful to have the privilege of embarking on this next chapter of my research journey in considering how "making" can shape our post-pandemic futures.

1.3 Paper & papermaking

First, a brief backgrounder on paper and papermaking. While I do not intend to provide a full historical account of the subject, some information might be useful to the reader. While the exact provenance of paper is unknown, scholars generally agree that it was invented in China between 123 BC and 105 AD (Hubbe & Bowden, 2009; Hunter, 1932). From there, the knowledge of hand papermaking was diffused across Eurasia and the Mediterranean, and eventually Europe, between 600 to 1500 AD (Bloom, 2017). As the art of papermaking traversed the globe, the practice was transformed in response to changing structural and material conditions, such as the availability of raw material, new technologies, trade and religion (Bloom, 2017). The most obvious example of this is the shift from artisanal production to industrial manufacture. Until the 1800s in Europe and America, paper was primarily handmade from recycled linen rags (often at

home or at a small-scale mill), but a shortage of linen incentivized the development of alternate methods, resulting in the invention of wood pulp and the ensuing industrialization of paper production (Bittel, Leong, & von Oertzen, 2019). With that, the practice of papermaking—once woven into the fabric of domestic life—became a private sector commodity.

Today, the industrial manufacture of paper persists, but the methods of production continue to change. According to the British Broadcasting Corporation (BBC, 2019), consumer demand for more sustainable material has been the driving force behind the paper industry over the last twenty years. In 2018, 72 percent of paper products were manufactured from waste paper: a 22 percent increase since 2005. Consumer demand for recycled paper product far outweighs the upfront costs associated with recycled paper manufacture, an endeavour costlier than paper production using "virgin" pulp. In the UK, the demand for recycled paper exceeds the supply of waste paper materials by 1.5 million tons. Paper manufacturers claim this is a result of the growing awareness of environmental issues such as waste and pollution. A regular, non-recycled single sheet of A4 paper can require up to 20 litres of water to produce.

Despite the industrial monopolization of paper production, the cultural practices and knowledge associated with hand papermaking persist. There are a number of institutions that continue to promote the practice of hand papermaking, both as a skill and artform. Although limited, papermaking still has a presence within Fine Arts faculties' book arts and fibres departments. Within the community, there are a number of papermills, museums, and galleries dedicated to the proliferation of papermaking and paper arts, as well. Among the most significant cultural institutions—many of which are based in the United States—are Dieu Donne Papermill (NY), the Morgan Conservatory (OH), and the Robert C. Williams Paper Museum (GA), to name a few. Also, it is worth mentioning the prestigious Awagami Factroy and Hall of Awa Japanese Paper Museum in Tokushima, Japan. Awagami is globally renowned for its "washi" paper, which is a traditional Japanese hand papermaking process, registered as UNESCO intangible cultural heritage in 2014. In Canada, the Banff Centre for the Arts includes a pulp and papermaking facility where artists can learn and experiment with old and new techniques in an artistic context.

Figure 1

A traditional papermaking workshop

Note. A traditional papermaking workshop, labelled as follows: drying rack (1), felts (2), moulds (3), water source (4), water area with drain (5), press (6), ventilation (7), containers (8), vat (9), flat surfaces (10*)*. From *The Complete Book of Papermaking* by Josép Asuncion, p. 51. Copyright by B T Batsford.

In Tiohtià:ke/Montréal—where I currently live, study and research—is also home to a hand papermaking institution of tremendous significance. St-Armand Papetier, located in the old industrial port on the south side of the Lachine canal, is an artisanal papermill that has been in operation since 1979. It is a commercial mill that produces fine art quality paper products that are distributed locally and globally, to retailers and artists alike. Thanks to my supervisor Dr. Kathleen Vaughan, in the early days of my MA education, I was fortunate partake in a tour of St-Armand, which contributed to my understanding of the papermaking process and its pedagogy.

In traditional craft communities, knowledge of practices was passed down from one generation of practitioners to the next. However, this body of knowledge was anything but fixed; rather, it evolved in response to the experimental rhythm of problem finding and solving inherent in material practice (Sennett, 2008). This holds true for the hand papermaking tradition. However, the way that knowledge is disseminated has changed and will continue to.

In place of the traditional workshop, my introduction to the culture and practice of hand papermaking has been through online forums and discussion boards. It is through these geographically disparate "communities of practice" (Wenger, 1999) that I connected with a wider network of hand papermakers and thus was able to participate in a form of knowledge dissemination. While hand papermakers use these platforms to share work, events and opportunities related to papermaking, they are primarily used in a dialogical manner. I have observed papermakers discuss practical problems pertaining to the papermaking process, incorporating unorthodox materials, and solutions to the many of contemporary challenges of hand papermaking, such as having limited access to traditional equipment and tools.

What these online forums reveal is the deeply social nature of hand papermaking that has always been intrinsic to the practice. As artisanal papermaking experts Jessica Cochran and Melissa Potter (2014) write, "hand papermaking is a naturally collaborative process, and within the exploratory realm of the studio it can be as experimental as it is pedagogical, as artists gather and share knowledge about specific fibers new techniques, or alternative processes. As such, many hand papermaking projects privilege community, collaboration, participation, student knowledge and empowerment over a hierarchical student-teacher dynamic or artistic product" (p. 14). Despite the fact that my research was conceived as an autodidactic exploration of process and materials, I still felt it necessary to seek out a connection to a broader community. Doing so expanded my understanding of the possibilities of hand papermaking and reinforced its continued value within contemporary society.

Chapter 2

2.1 Literature Review

    This research is founded upon the belief that making things has significant pedagogical value. But what does it mean to make things? In art education, we "make art" just as we "make meaning"; it seems the concept of "making" has been ill-defined. However, to "make," is not an impartial concept and it warrants a closer look. According to anthropologist Timothy Ingold, who has written extensively on the topic of artistic practices, the normative expression of the term—which can be traced to antiquity—conceptualizes making as "a project, by which an idea, already framed within the imagination, is realised in a material substrate pre-prepared to receive it" (2012, p. 177). This view of making—which Ingold opposes—is predicated on a metaphysical separation of the mind and body, where the mind is afforded primacy over the body. In turn, the processual and relational nature of "making" is erased, thus trivializing the materialist dimension of practice.

    It seems this pervasive notion is indeed alive and manifest within contemporary educational contexts. As I argued in *Section 1.0*, the separation of mind and body— and by extension making and thinking—is a common practice within art education. This is also evinced in the use of digital technologies that allow us to circumvent more traditional forms of making. There is much to say about the proliferation of digital technologies and their expansive reach and influence over all realms of life, for better or for worse. For the purpose of this research, my intention is to highlight briefly some issues that occur when digital technologies are used as a substitute for material practices, to demonstrate the continued relevance of making in pedagogical contexts. In *The Craftsman* (2008), Richard Sennett makes a compelling case for the value of hands-on practice as a method of problem finding and solving, and warns against what he calls the "misuse" of digital technology in educational contexts. While Sennett's approach does not align with mine in every regard—as I will soon reveal, my research is situated within a posthuman theoretical framework, which at times conflicts with Sennett's thinking—he does illustrate well, through concrete examples, the process of thinking-in-making. I will elaborate on this shortly.

    First of all, with regards to the pedagogical implications of digital technologies, Sennett (2008) draws on an example from the realm of design. He argues that computer-assisted design software (CAD), commonly used in professions such as architecture and engineering to create digital renderings of objects, is one example of a technology that "poses dangers of misuse" in

learning contexts. Since its inception, CAD has virtually replaced drawing by hand as a method of rendering design, thus displacing the type of learning that occurs through the traditional drawing process. As Ingold (2011) writes,

> Why draw, indeed? If your purpose is to describe or explain, you can do it better with words. If your purpose is to represent, illustrate or display, you can do it more quickly and accurately by photographic means. Drawing to the extent that it persists at all, looks like a survival, rendered more or less obsolete by the keyboard and the camera. (p. 177)

What Ingold describes here is the commonly held reductive view of drawing, which he deems reductionist. Undoubtedly, the capitalist monopolization of time plays a role in this type of thinking: why "waste" precious time making something manually when the technologies exist to perform the same task on your behalf, in just a fraction of the time? The demands of productivity and the orientation to 'outcomes' in educational settings begets acceptance of these technological shortcuts.

Like others who explore varieties of drawing as modes of thinking for individuals of all ages (Steele, 1997; Wasserman, 2013), Sennett (2008) writes, "[…] as in other visual practices, architectural sketches are often pictures of possibility; in the process of crystallizing and refining them by hand" (p. 40). Quoting the architect Renzo Piano, he explains further, "you start by sketching, then you do a drawing, then you make a model, and then you go to reality—you go to the site—and then you go back to drawing. You build up a kind of circularity between drawing and making and then back again" (p. 40). Piano/Sennett's understanding is that drawing is not simply a process of "projection," but an iterative dialogue between the maker and material process. In this instance, drawing surpasses sheer representationalism and becomes "generative movement that is at once itinerant, improvisatory and rhythmic" (Ingold, 2011, p. 179).

Unlike the open ended, "attaching, circular metamorphosis" that is the process of drawing, CAD operates in a closed, means-end system (Sennett, 2008, p. 40). Sennett writes,

> when practice is organized as a means to a fixed end, then the problems of the closed system reappear; the person in training will meet a fixed target but won't progress further. The open relation between problem solving and problem finding […] builds and expands skills, but this can't be a one-off event. Skill opens up in this way only because the rhythm of solving and opening up occurs again and again." (2008, p. 38)

Thus, when practitioners choose convenience over process, they relinquish some capacity to develop the type of intimate knowledge of processes and materials that can only be obtained

through practice. Bypassing the opportunity to "dwell in mistakes" also means forfeiting the opportunity to learn from them (Sennett, 2008). These examples highlight what is the central thesis of both Ingold and Sennett: material practices such as drawing, craftwork—and simply, making things—are forms of thought.

Most users of digital technologies have virtually no understanding of the internal mechanisms—the networks, circuit boards and algorithms that are used to preform "routine" tasks (I use routine to mean the normative way in which practice is understood—a concept that I hope to call into question in subsequent chapters). Thus, as Sennett (2008) relays, "the computer understands the answer, but I don't think you understand the answer." This is indicative of what Bruno Latour (1999) refers to as "blackboxing." Latour describes this phenomenon as

> the way that scientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need only focus on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become. (Latour, 1999, p. 301)

Latour's concept of blackboxing brings to light some of the pedagogical problems inherent in software such as CAD, that exemplify this input-output model of design. However, blackboxing could also be a framework or metaphor to more broadly consider how the world is organized. The pervasive reliance on digital technologies—which we have little understanding of—fosters a culture of accepting the status quo.

At the risk of sounding like a neo-luddite, I must declare that I do not dispute the value or usefulness of many digital technologies, especially the life-enhancing capacities of some adaptive and assistive technologies. I also agree with David Gauntlett, Canada Research Chair in Creativity at the Faculty of Communication and Design at Ryerson University, that digital creation—such as the work of computer coder—is a form of making and material practice (Gauntlett, 2011). Subscribing to the binaries of "virtual" and "real," would be counter to the work of this thesis, which seeks to unsettle dichotomous ways of thinking. However, there still remains a crucial distinction between "technology" on one hand, and analog material practices— the focus of this research—on the other.

Next, a word on technology for the purpose of clarity. This will be brief, as technology is not the subject of this research, but it is implicated in the supporting arguments. The word "technology" poses somewhat of a semantic trap; it can be so broadly applied to objects and

processes that without an accompanying definition, it is virtually meaningless. For the purpose of this research, I define technology in a rather narrow manner. Following Ingold (2000), I surmise a fundamental difference between the categories of "machine" and "tools,"—wherein technology is situated in the category of "machine"—that is predicated on the operational role of the human body. He writes,

> the worker does not just apply motor force but actually guides the movement of the tool, watching as he works, and making continual adjustments in response both to environmental perturbations and to his perceptual monitoring of the developing form. In the machine, by contrast, responsibility for the movements of the tool—or what has now become the device's 'working point'—is transferred from dextrous hands to a mechanism that is indifferent to its surroundings and answerable only to instructions that have been fed into it in advance […] Thus a machine may still be hand-operated, but when the hand delivers only muscle-power and not skilled constraint—that is when the technically effective gesture ceases to be coupled to immediate sensory perception—the tool or working point is no longer 'handled' in Marx's sense (2000, p. 301)

Obviously, there is more to be said regarding machines; even under this umbrella, further distinctions between industrial and computerized machinery are necessary. However, for the purpose of what I aim to achieve, it is enough to acknowledge difference between the material practices (that are the focus of this research), and machines and technologies.

There are many tools involved in the hand papermaking process. However, as I have observed during my own papermaking experiments, the role of the body remains central. While making paper, I have noticed how my body adopts a particular grammar that is suited to the unique movements and gestures inherent within the process. Traces of the body are also left in the material—traces that range from obvious to discreet. I often think of the fingerprints that are inevitably left behind when the wet paper is handled, or even the airborne particles that get caught between the fibres as they bind together. There are always traces—an exchange, if you will—between bodies in material/craft practices, that reveal the story of the encounter. I surmise that Walter Benjamin must have understood this when he drew this comparison between craft and storytelling:

> The storytelling that thrives for a long time in the milieu of work—the rural, the maritime, and the urban—is itself an artisan form of communication, as it were. It does not aim to convey the pure essence of a thing, like information or a report. It sinks the

thing into the life of the storyteller, in order to bring it out of him again. Thus traces of the storyteller cling to the story of the way the handprints of the potter cling to the clay vessel. (Benjamin, 1936/1969, p. 92)

As with storytelling, craft practices have histories that are ancient when compared with the modern invention of digital technology, and thus carry with them histories, cultural and vernacular knowledge and embedded practice-based modalities of teaching and learning. From my perspective, this is what sets traditional material practices apart from digital practices.

Chapter 3

3.1 Theoretical framework

One way to build a case for making is to valorize the "matter" we use by exchanging the idea of matter as "passive stuff, as raw, brute, or inert," for a "vital materiality" (Bennett, 2010). For political philosopher Jane Bennett, the "vitality of matter" is the "capacity of things— edibles, commodities, storms, metals—not only to impede of block the will and designs of humans, but also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own" (2010, viii). Attention to the vital forces inherent in matter resound within new materialist literature.

New materialist theory share resemblances with concepts such as posthumanism, post-qualitative, and the empiricisms—all of which are a reaction to the binaries frequently associated with realist and constructivist philosophies (Rosiek, 2017). Diana Coole and Samantha Frost (2010) describe the new materialisms as a dynamic area of scholarship that resists an overarching orthodoxy. It contains divergent theories of materiality that encompass a broad spectrum of thought traversing traditional academic disciplines, accompanied by various philosophical, methodological and political imperatives (Dolphijn & van der Tuin, 2012). Despite this lack of theoretical cohesion, Coole and Frost (2010) surmise a general understanding of new materialist theory as "as a complex, pluralistic, relatively open process and their instance that humans, including theorists themselves, be recognized as thoroughly immersed within materiality's productive contingencies" (p. 7). They further articulate matter as "excess, force, vitality, relationality of difference that renders matter active, self-creative, productive, unpredictable" and "caught in a multitude of interlocking systems and forces" (p. 9).

New materialism is a highly contested area of theorizing. Among the most salient critiques of the new materialisms is its relative "newness." As Coole and Frost (2010) contend, the "newness" of the new materialisms is perhaps better understood as a "renewal." Indeed, new materialist theory has an extensive theoretical lineage that can be traced to other historical materialisms, from 19th century Marxism (Coole & Frost, 2010) to antiquity (Bolt, 2013). Although academic interest in materialist theories waned in the 20th century, it has since come back into focus. Not-so-curiously, this renewed interest corresponds with a growing awareness of the politico-ecological consequences of thousands of years of anthropocentric thinking (Bolt, 2013). These consequences appear to us in the form of mounting environmental devastation

spurred on by late capitalism, which demands infinite access to resources to meet the productive output associated with unrestrained accumulation and growth.

Some of the ontological commitments of the new materialisms have been present in Indigenous knowledges since time immemorial (see Jones & Hoskins, 2016; Martin, 2013), but remain virtually unacknowledged in new materialist theories. Given the pervasiveness of settler-colonialism and white supremacy, this warrants questions of how new materialism can engage with Indigenous worldviews—not as a method of possessing Indigenous knowledges, but to foster solidarity and benefit the sovereign political projects of Indigenous communities (Rosiek, Snyder, & Pratt, 2019). However, the question of how to honour Indigenous knowledge systems while working within the colonial framework of the academy is complex, and beyond the scope of what this thesis is able to examine. Even so, it is a question foundational to consideration of what counts for knowledge and according to whom, which is part of my research-creation project.

3.2 A materialist approach to making

Despite the problematic features of the new materialisms, I agree with Hickey-Moody's (2016) evaluation that new materialism is a productive framework for thinking about the agentic capacities of matter in the context of material practice. As Barbara Bolt, a leading scholar in the field of new materialism and artistic research, writes: the new materialisms allow us to "negotiate the relations between the various bodies that enable art to come into being—the material bodies of artists and theorists, the matter of the medium, the technologies of production and the immaterial bodies of knowledge that form the discourse around art" (Bolt, 2013, p. 7). Indeed, this is a tall order; though the new materialisms have initiated a productive discourse within the world of art and making, as previously mentioned, there is no theoretical cohesion. On that note, I want to clarify that I do not intend to provide a comprehensive overview of this meandering, transversal and at times paradoxical theoretical tradition. Instead, I will turn to specific materialist concepts that have offered me constructive ways of thinking about processes of making and material practices as pedagogy.

One of my primary accomplices on this research journey is Tim Ingold, whose materialist oeuvre has laid the groundwork for this research. Ingold's work provides a cogent analysis of the processes of making that is attentive to the ineffability of materials, while also disrupting the divisions of mind/body, theory/practice, and material/immaterial that are pervasive in Western

society. In the following section, I will address some of his key ideas that offer constructive ways to think about materials and making in the context of this research.

In an earlier section (2.1), I referred to the normative definition of "making" as "a project, by which an idea, already framed within the imagination, is realised in a material substrate pre-prepared to receive it" (Ingold, 2011, p. 177). This is exemplary of what he refers to as the "hylomorphic model" of making, derived from the Greek word for matter (hyle) and form (morphe). Further, he writes that "whenever we read that in the making of artefacts, practitioners impose forms internal to the mind upon the material world 'out there,' hylomorphism is at work" (Ingold, 2013, p. 21). I have no doubt that the reductionist understanding of making contained with the hylomorphic model—and the metaphysical separation of mind and matter that it entails—has resulted in the marginalization of material practices in pedagogical contexts. However, this is not just a problem for art education; it is a subject that has been given little attention in the broader field of contemporary art, where the term material has historically signified a "raw" substance to be processed by the artist (Wagner, 2015). It is also interesting to note that modernist approaches to art have been long been equated with materialism. However, as art historian Petra Lange-Berndt (2015) argues, the project of modernism was, in fact, to "overcome" the material in pursuit of form, ignoring essential qualities and histories. This model not only does a disservice to materials, it also diminishes the work of artist-makers whose "improvisatory creative labour"—is erased by a determinate means-ends (Ingold, 2013).

The hylomorphic model and the modernist approach are antithetical to Ingold's conceptualization of the process of making. He argues that in place of this top-down approach we would do well to consider making as a process of growth to be read longitudinally, "as a confluence of forces of materials" (Ingold, 2013, p. 22), and a process of "morphogenesis in which form is ever emergent rather than given in advance" (Ingold, 2013, p. 25). This model situates the maker as a participant amongst—as opposed to master over—materials, affording emphasis to process over outcome. By extension, this model also acknowledges the contributions of non-humans within the making process. This works against the normative conceptualization of materials as "brute matter." Materialists, to various degrees, understand matter as active and lively. Often, this liveliness is conceptualized as "agency," or the power and capacity of materials to act (Bennett, 2010; Maapalo & Ostern, 2018). For Ingold (2007), the concept of agency does not do well to account for the liveliness of things. As he argues, materials do not *contain* life, they are *in* it.

In *Materials Against Materiality* (2007), Ingold draws upon James Gibson's (1979) framework for understanding the "inhabited environment" to assert the relational and processual nature of materials and challenge the metaphysical separation of mind and matter. According to Ingold (2007), Gibson's "environment" is comprised of three primary constituents: "media," "substances" and "surfaces." The "medium" or "media" is the enveloping matter of environments, such as air or water, that afford movement and perception. "Substances" are the materials that create the physical foundations of the world, such as wood, rock, concrete and flesh. At the interface of the medium and substances are "surfaces." On the topic of surfaces, Ingold (2007) writes,

> All surfaces, according to Gibson, have certain properties. These include a particular, relatively persistent layout, a degree of resistance to deformation and disintegration, a distinctive shape and a characteristically non-homogeneous texture. Surfaces are where radiant energy is reflected or absorbed, where vibrations are passed to the medium, where vaporization or diffusion into the medium occur, and what our bodies come up against in touch. (p. 5)

Within this framework, humans, too, are figured as material beings. Ingold (2007) writes that we "swim in an ocean of materials" of "a flux in which materials of the most diverse kinds—through process of admixture and distillation, of coagulation and dispersal, and of evaporation and precipitation—undergo continual generation and transformation" (p. 7).

This flux—of medium, substance, and surface—is life itself, and is responsible for the generative movement often attributed to "agency." Therefore, according to Ingold, "bringing things to life, then, is a matter not of adding to them a sprinkling of agency but of restoring them to the generative fluxes of the world of materials in which they came into being and continue to subsist" (2007, p. 12). Elsewhere, he refers to the "generative flux" of materials as the "matter-flow" (Ingold, 2012). Against the hylomorphic model that conceives of making of the transposition of a preconceived form onto passive matter, he argues that what artists actually do is "follow the matter-flow": a "process of correspondence" wherein the artist draws out and brings forth the potentials of materials "immanent in a world of becoming" (Ingold, 2012). This stands apart from Sennett's (2008) view of making, which focuses on the relation between the head and the hand, while saying virtually nil about materials external to the human body that are implicated in this relation.

From this perspective, things are never made; they are always "becoming." Conceiving of the process of "making" as one pit stop on the highway of the matter-flow, rather than the end of the journey, does something to disrupt the notion of the discrete "object." Ingold (2012) laments that within the study of materials there is an "overwhelming focus on the way finished artifacts are enrolled in the social lives of human beings" (p. 435). He argues that to view things in this way—as complete objects—renders the material devoid of the movement consistent with being a thing of the world. With this in mind, this research is based in a method of working practically *with* materials as a procedure of discovery, rather than a distant and abstract analysis of objects and things (Ingold, 2007). I harness the *practice* of papermaking as a lens for discovering the pedagogy of making and materials, and to uncover the dynamic materials hidden under the veneer of the object of "paper." I do so using a research-creation methodology, as I describe in the next chapter.

Figure 2

Paper detritus found during a walk in Montréal.

Note. [Digital photograph].

Chapter 4

> *'Ah,' sighs the traditional subject, 'if only I could extract myself from this narrow-minded*
> *body and roam through the cosmos, unfettered by any instrument, I would see the world*
> *as it is, without words, without models, without controversies, silent and contemplative';*
> *'Really?' replies the articulated body with some benign surprise, 'why do you wish to be*
> *dead? For myself, I want to be alive and thus I want more words, more controversies,*
> *more artificial settings, more instruments, so as to become sensitive to even more*
> *differences. My kingdom for a more embodied body!' (Latour, 2004, p. 212)*

4.1 Research-Creation

Current research in art education is overwhelming conducted within a qualitative paradigm (Milbrandt, Miraglia, & Zimmerman, 2018). How, then, might we take up St. Pierre's (1997) challenge to "produce different knowledge and produce knowledge differently" (p. 175)? While I do not discount the value of qualitative research, I agree with Graeme Sullivan (2010) that "to continue to borrow research methods from other fields denies the intellectual maturity of art practice as a plausible basis for raising significant life questions and as a viable site for exploring important cultural and educational ideas" (p. 95). Furthermore, I am compelled by Ingold's (2013) call to for us to "know things from the inside," followed by his assertion that "the only way one can really know things—that is, from the very inside of one's being—is through a process of self-discovery. To know things you have to grow into them, and let them grow in you, so that they become a part of who you are [...] the mere provision of information holds no guarantee of knowledge, let alone understanding." I argue that for the artist-educator-researcher, "knowing from the inside" means in and through material practice.

Research-creation is a methodological approach that is based in artistic and creative practices. According to Natalie Loveless (2019), this term originated in the academic milieu of Quebec, as a way of accounting for and supporting the emergence of artistic and creative research practices within an academic context. It has since become the standard language used by Canadian research institutions to describe such approaches. Other jurisdictions favour terminology such as practice-based or practice-led research, creative research and artistic research, and much has been said about the differences captured by each term. However, for the purpose of this research I will use several of these terms interchangeably, indicating discrepancies between their definitions when necessary and useful.

The Social Sciences and Humanities Research Council (SSHRC)—the federal agency responsible for funding university research and training in the humanities and social sciences within Canada—defines research-creation as:

> An approach to research that combines creative and academic research practices and supports the development of knowledge and innovation through artistic expression, scholarly investigation, and experimentation. The creation process is situated within the research activity and produces critically informed work in a variety of media (SSHRC, 2019).

Research-creation is further defined by communications scholars Owen Chapman and Kim Sawchuk (2012) as a "creative process, experimental aesthetic component, or an artistic work as an integral component of the study" (p. 6). They also identify four subcategories under the research-creation umbrella: 1) research-for-creation, 2) research-from-creation, 3) creative presentations of research and 4) creation-as-research. However, they emphasize the porous and overlapping boundaries of these categories, as no single term can encompass the range of practices that are enacted under the banner of research-creation (Chapman & Sawchuk, 2012). This resistance to simple categorization is, in part, the power of this approach.

While the variable terminology used to describe research based in creative and artistic practices is contingent on a number of factors that include institutional policy, geography and discipline, this project is not a taxonomy of methodology. Instead, I will elaborate on the approach that I have adopted for this research. My own preference is to describe such endeavours as artistic research. As Nowotny (2011) suggests, the term "artistic research" promotes an analogy with scientific research; rather than equating scientific research with academic research, both paradigms are able to exist alongside one another, with each their own ontological and epistemological practices.

However, does rendering artistic and scientific research equivalently as "paradigms"—a term that is also quite nebulous—suggest subjection to similar treatment with regard to more meta academic processes such as standardization, evaluation and dissemination? As Kjørup (2011) writes the concrete activities captured under the umbrella of "artistic research" are profoundly diverse. While the scientific paradigm contains a tremendous amount of specific, sub-disciplinary diversity, there are, across the board, standards for practice and evaluation. The question of "standards" has been one of the primary debates that has been ongoing since the institutionalization of artistic practices began. With regards to this, Kjørup (2011) contends that

subjecting artistic research to fixed standards of production and evaluation would inevitability homogenize artistic research outputs, therefore diminishing the diversity and originality contained within such practices, which is much of the appeal. Against standardization, Kjørup (2011) argues instead for a "pluralistic approach" that "leaves problems of quality and category to a discussion about each research achievement and not its formal setting" (p. 24).

As research-creation secures its foothold within the university landscape, it carries with it a political imperative to rethink disciplinary boundaries and modalities of knowledge production within the university; it asks us to consider—and, rightfully so—"what can and should count as research" (Loveless, 2019). This corresponds with a broader movement in the academy— evidenced by the posthuman "turn"—that challenges regimes of objectivity and truth. As Ingold (2013) writes,

> In the academic pantheon, reason is predestined to trump intuition, expertise to trump common sense, and conclusions based on the facts to trump what people know from ordinary experience or from the wisdom of their forebears […] Therefore, it is by seeking to understand these ways of life, and by acquiring for ourselves some of the knowledge and skills required to practise them, that we have most to learn. Armed with this learning, and with the critical perspectives it opens up, we can turn our sights back on the academy and, as it were, cut it down to size by revealing the limitations inherent in its own knowledge practices. (p. 2)

But how, exactly, do artistic practices disrupt the reigning logics of truth and reason in the academy? Many of us who have dedicated our lives to the arts in some way have a tendency to overestimate or romanticize their disruptive potential. It should go without saying, but art too is capable of reproducing the prevailing logics of the academy. An example of this can be found within the paradigm of representationalism. In the context of art, representationalism tends to be conflated with realism and naturalism, but as Bolt (2004) writes, it is "not an outcome, but rather a mode of thinking and a relationship to the world that involves a will to fixity and mastery" that "orders the world and predetermines what can be thought" (p. 17). Representationalism, understood crudely, is a type of essentializing force that renders the work of art as the objectification of the world at the hands of "[hu]man-as-subject." Therefore, it is not contingent on the type of media, style or art movement; when it comes to representationalism, the abstract expressionists are just as guilty as the realist painters (Bolt, 2004).

The paradigm of representation and—by extension—interpretation, have been the prevailing modes of inquiry in the fine arts within both the academic milieu and the "art world" (Bolt, 2004; 2013). However, all research pertaining to art does not occur with an "artistic research paradigm" by default. According to Henk Borgdoff (2011), what is significant about artistic research is that it "seeks not so much to make explicit the knowledge that art is said to produce, but rather to provide a specific articulation of the pre-reflective, non-conceptual content of art," thereby inviting "unfinished thinking" (p. 44). It follows, argues Borgdoff (2011), that the purpose of artistic research is "thinking in, through and with art" (p. 45). Therefore, there is a fundamental difference between research "about" art and art practice (common to the humanities and social sciences), and the research that is situated within an artistic mode of inquiry (Borgdoff, 2011; Ingold, 2013). While representationalism is too complex a philosophical arena to fully parse through here, I do want to consider potential counter-representationalist approaches that are useful for this research.

If we accept the pervasiveness of representationalism in Western intellectual traditions, discourse and thinking, it does seem unfathomable that we could entirely avoid it within university-based research. Within my thesis research, I do not claim or intend to do away with representationalism entirely. Instead, my aim is to consider approaches that could constitute non-representational ways of doing research with the hope of creating a productive rupture within the representationalist paradigm. One approach, as Bolt (2004) argues, is "by focusing on enunciative practices, that is, systems of fabrication rather than systems of signification, there is a possibility of investigating the field of an "art of practice" starting from the bottom, rather than from the top down" (p. 7). By attending to processes and material practices—the making of the "work of art"—we disrupt the "casual chain of means and ends" and the "relationship between objects, artists, materials and processes emerges as one of co-responsibility and indebtedness, rather than one of mastery" (Bolt, 2004, p. 9).

Alongside a "logic of practice" (Bolt, 2004), I consider a complimentary "logic of experimentation" (Assis, 2018). In *Logic of Experimentation: Rethinking Music Performance through Artistic Research* (2018), Paulo de Assis argues for a practice-led approach to artistic research that centres experimentation and aims to "criticize, challenge, and deconstruct prevailing methods" (p. 20). Further to this, he writes "a logic of experimentation is contrary of a system designed to replicate experiments and tests; it is more like an 'apparatus of capture' employed to capture colours, sounds, vibrations, forces, and intensities. It deals with matter and

materialities, always starting from concrete practices that are exerted upon concrete objects and things" (p. 23). de Assis' framework requires practice to remain open and flexible in terms of its objects of inquiry, with the goal of fostering problematization. Thus, this type of research requires an embrace of the old adage: "trust the process." Although Assis's "logic of experimentation" is based in musicology and performance, it offers a constructive approach for thinking about the performativity and materiality of art practice. The orientation to problematization encourages us to not fall into habitual ways of thinking and making things. Instead, it asks us to disrupt these practices through an experimental reconfiguration to allow for "new thoughts, feelings and sensations" (Assis, 2018).

4.2 Papermaking as method

My research is based in the approach of working practically with materials as a procedure of discovery (Ingold, 2007). This thesis involves two major components: a sustained, exploratory investigation of the material practice of hand papermaking and the exegesis in the form of this text. Although practically separate, these two components are mutually-informing, sustaining each other through an iterative dialogue. In fact, weaving the practices of papermaking and writing has been one of the most generative aspects of my research. As with papermaking, I view writing as a material practice that serves a purpose irreducible to representation; it too forms an "attaching, circular metamorphosis" (Sennett, 2008). This is demonstrative of how thought is produced by and through the material world. I appreciate Ingold's (2011) analogy of writing as a "species of gathering, rather than projection." I agree that writing and thinking are not forms of immaculate conception, but rather processes of gathering together the stories we have followed along our material trajectories.

4.3 Reflexive praxis

I incorporate reflexive praxis—a deeply subjective and relevant process utilized by both pedagogues and artists—as a method of analysis for this research. Specifically, I follow Schön's (1991) twofold approach of 1) *reflection in action* and 2) *reflection on action*. First, *reflection in action* is a method of reflecting on and responding to situations as they arise through process. This corresponds with the method/process of "thinking-in-making" (Ingold, 2013) that occurred during my studio experiments, as I responded to the unpredictable and lively materiality of papermaking practice, as I will discuss in Chapter 4. Secondly, *reflection on action* attends to

events after they transpire, as well as the thoughts, feelings and actions related to those events. While in the studio, I collected documentation in the form of photographs and written notes as a partial record of my papermaking experiments. This documentation was useful reflective material, on- and in-action (Nimkulrat, 2011). For the purpose of the research exegesis, it allowed me to partially illustrate the *reflection in action* that had transpired in the studio. It was also useful as an elicitation material for *reflection on action*. Viewing the photographs and reading my field notes conjured up a well of questions, speculations and feelings that I was able to parse through in this text.

For practitioners, the reflective process is fundamental component of research. How else would we excavate the "knowledge born of sensory perception and practical engagement […] of the skilled practitioner participating in the world of materials" (Ingold, 2007, p.13-4)? Furthermore, as Linda Candy (2017) writes in the introductory chapter to *The Creative Reflective Practitioner,*

> when we practice bringing awareness to our present state of thinking and feelings, we learn through that experience. Focusing our attention in a deliberate way enhances our capacity to break out of habitual patterns of thought. In doing so, we are better able to reveal what we have known only tacitly until then. (p. xiv)

In practice-as-research, reflective processes are crucial. Much of the textual component of my research was generated through both reflection on and in action. This revealed more to me than the nature of my experience of and relation to the process of papermaking; it revealed the generative nature of writing-as-practice. Writing-as-practice, again, is the crux of this research; it is method to investigate the fundamentally pedagogical nature of an expanded material practice and to discover how knowledge is generated by doing, whether that doing is papermaking or writing.

Chapter 5

The idea is crystalline, the fact fluid.
(Brand, *How Buildings Learn*, 1995)

5.1 Introduction to the discussion

Next, a word about the structure of my studio inquiry. It is important to note that the purpose of this research was not to achieve proficiency or skill in the processes of hand papermaking. Of course, this did occur to some degree—especially considering that I had no prior papermaking experience—but that falls entirely short of my research goals. I admit that even after six months of practicing hand papermaking, my level of technical achievement would be regarded by life-long papermakers as limited. However, the goals of this research were not oriented to standardized measures of success, but rather to examining what happens from with material practices and its relevance to pedagogy. As such, I found myself sitting with the minutiae of practice for prolonged periods of time, instead of "progressing" to the next phase or chasing after some benchmark of success. Through attentiveness, I was able to honour the emergent nature of research-creation, which at times can be subtle and incremental.

While this might seem like a cumbersome endeavour to some, I found it to be a deeply rich and contemplative process. It succeeded in revealing many of the quotidian aspects of material practice, which often go ignored but have tremendous pedagogical value. In order to focus my attention on the subtle movements that occur in practice, while attending to them in a manner than was as exhaustive as possible, I limited the scope of my studio inquiry to four technical thematics. In turn, these four particulars of the papermaking process became the organizing principle of my studio inquiry and the ensuing discussion: 1) basic sheet formation, 2) dimensionality, 3) colour and 4) embellishment. Preceding this discussion, I will first address the inhabited environment of the studio, followed by a brief overview of some of the fundamental aspects of the papermaking process. I will use photographs to illustrate where necessary. It is important to note that while these four aspects of the papermaking process serve as a guideline for my inquiry, they remain open and flexible. Attending to the "matter-flow" (Ingold, 2012) requires a responsiveness to what materials do, and this cannot be determined outside of or prior to practice. For the purpose of legibility, the discussion is organized to follow sequential stream of thought, but the reality of practice was not linear. Thus, at times my discussion will go in

unexpected—even somewhat tangential—directions. This is the pedagogy of "resistant materials" at work (Hickey-Moody & Page, 2016).

The discussion section will also contain an account of my studio experiments and the materials generated through studio activities. Following Ingold (2012), I refer to the material artefacts resulting from my studio activities as paper-things, as a way to differentiate between complete and static "objects" and the open and ongoing processes of "things." Paper material can neither be understood a stable entity or complete in its becoming. This relates to what sociologist Karin Knorr-Cetina (2001) refers to as the "epistemic object" or "partial object" of the research process. On this she writes,

> the everyday viewpoint, it would seem, looks at objects from the outside as one would look at tools or goods that are ready to hand or to be traded further. These objects have the character of closed boxes. In contrast, objects of knowledge appear to have the capacity to unfold indefinitely. They are more like open drawers filled with folders extending indefinitely into the depth of a dark closet. Since epistemic objects are always in the process of being materially defined, they continually acquire new properties and change the ones they have. But this only means objects of knowledge can never be fully attained, that they are, if you wish, never quite themselves. What we encounter in the research process are representations or stand-ins for a more basic lack of object (p. 182).

Simon Werrett writes on "partial objects" and their emergent identities in *Thrifty Science: Making the Most of Materials in the History of Experiment* (2019): "it could be argued this idea is very evocative of how early moderns thought about material things. Rather than […] having some predetermined and singular function, they understood them to be open-ended and capable of revision, reworking" (p. 45). With regard to papermaking, adopting the attitude of early moderns allows us to understand the practice as having more than a means-end purpose of object production and, instead, as containing a pedagogy of "becoming."

5.2 The studio

As previously mentioned, this work is primarily studio-based. I would be remiss, as a materialist, to negate the site where much of making-thinking took place. For six months, I was working in a converted industrial building located in the contemporary textile district in Montreal's north end. During the day, the space is brightly lit by an uninterrupted chain of windows that wrap around the exterior, south-facing wall. In the winter months, I found the

space to be dry and moderately warm. In the summer, it was hot and humid; the windows, lacking curtains, amplified these conditions enormously.

Figure 3

A view from inside my studio.

Note. A view from inside my studio, looking out the south-facing window. [Digital photograph].

I occupied a small corner near the laundry sink: less than 100 sq. ft. of space. Taking into consideration the needs of the papermaking process, I set up two tables to work on—a wet area and a dry area—both consisting of a sheet of plywood laid atop of two wooden trestles. The dry area was organized for note taking on my computer and for storing materials, tools and the remnants of my studio experiments. The wet area was where the papermaking process occurred: the blending, forming, colouring, furnishing, drying and more.

Figure 4

My studio space

Note. This space was setup to accommodate my papermaking experiments. The table on the left was reserved for dry processes and the table on the right, for wet processes. [Digital photograph].

My studio setup was far removed from a traditional papermaking studio. It was not equipped with a beater for processing pulp, a paper press, a drying box or a vacuum table. Instead, I improvised many of the systems required for paper production. Thus, my inquiry through material practice was guided in part by what the materialities of the environment would invite, permit or constrain: what I will refer to here as "affordances" (Maapalo & Ostern, 2018). Beyond the materials, tools and equipment that were available, I also want to consider the affordances of place. While working in the studio, my thoughts often drifted to the political and cultural histories surrounding this particular neighbourhood. The relationship between

papermaking and the textile industry is significant. Historically, one of the main sources of materials for papermaking was waste textiles. While rags and offcuts from the textile industry are still used in papermaking, the proliferation of synthetic materials has made it more difficult to source the appropriate waste materials. Thus, for many professionals, papermaking has become a costlier and less sustainable endeavour. Ruminating on these histories and connections, I ask: how do the thoughts that emerge from the situatedness of the studio interact with my papermaking practice? What future inquires might this provoke? This is one line of thinking, among many, which emerged through being-in-practice. While is not possible to follow all the breadcrumb trails that materials leave for us, it does demonstrate the infinitely generative nature of material practice.

5.3 Making paper

Through my research on hand papermaking, I have learned that the practice is always in flux. In the thousands of years following its inception, innumerable techniques and approaches to hand papermaking have been developed. Thus, it would be an impossible task to provide an exhaustive account of all the possibilities this practice has to offer. Instead, I will provide a brief introduction to some of the fundamental aspects of the process as a point of departure for the discussion of my studio activities.

My foray into the world of hand papermaking began with this research. Therefore, there was a significant amount of new learning involved. Initially, I relied on manuals and instructional videos to provide me with a baseline understanding of the basic procedures involved in the process. My primary instructional resources were *The Papermaker's Companion: Ultimate Guide to Making and Using Handmade Paper* (Hiebert, 2000) and *The Complete Book of Papermaking* (Asuncion, 2003), which I supplemented with how-to videos in an attempt to bridge the gap between theory and practice.

Traditionally, papermaking involves two primary materials: a source of cellulose fibre and water. The process for preparing the raw fibres for papermaking vary depending on the specific material that is used, but this is outside the scope of this research. For my studio experiments, I worked with pre-prepared pulp that has already been made suitable for papermaking. At this juncture, small amounts of the pulp can gradually be added to water and mixed in a blender. This process mechanically separates the fibres, leaving them suspended in

the water. This forms the water-fibres mixture that papermakers refer to as "paperslurry" or simply, "slurry."

Figure 5

Shredded abaca pulp in water

Note. A small amount of shredded abaca pulp floating in a blender jar of water, prior to blending. [Digital photograph].

The ratio of fibres to water will alter the outcome of the paperslurry. Generally speaking, as the mixture is diluted with more water, it creates/transforms into thinner sheets of paper. From a materialist perspective, this is perhaps over-generalizing the outcome. Although diluting the

slurry had a tendency to produce thinner sheets of paper, this did not hold true as a rule. For example, there were times when the paperslurry appeared quite thick, but resulted in thin and uneven sheets of paper.

Figure 6

Paperslurry in a vat of water

Note. Paperslurry diluted in a vat of water, readied for papermaking. [Digital photograph].

Through my studio experiments, I was reminded of the innumerable material transformations underway at a micro level—the flux of "surfaces" (Ingold, 2007; Gibson, 1979)—not necessarily immediately perceived by the human. For example, by holding the glass jar of the blender that was filled with paperslurry to the light of the window, I saw quite literally illuminated contents inside, providing me with a new visual perspective of the pulp's consistency. Dense, opaque areas that appeared tended to indicate that the slurry had not been uniformly processed. Similarly, this method could also be used to determine if a formed sheet of

paper has any weak spots in its surface. Once the slurry was ready, it was then diluted further in a vat of water and paper.

My experiments with papermaking had a modest beginning. Initially, I had some difficulty in sourcing dry pulp for papermaking. Without access to a Holland Beater—the machine use to mechanically break down raw fibres and other materials, such as rags, into pulp—my options were limited. Eventually, I found a bag of shredded waste paper on the sidewalk during my borough's recycling day. This scrap paper material would later become my first batches of paper slurry. Found adjacent to an elementary school, I could only assume it was shredded administrative files: report cards, spreadsheets, etc. Similar to confetti, the shredded paper was fairly uniform in shape and colour, with a light gloss on one side. Waste paper is often the most accessible material to use as a source of pulp in hand papermaking because it has already been made suitable during its initial manufacturing process. It is therefore easily reconstituted to its former pulpy state by adding water and mixing in a kitchen blender.

I experimented with different paper fibers (variations of cotton and abaca, hemp, kenaf, sisal), methods of sheet formation and the addition of pigments and furnishes. Due to my limited access to materials and equipment, I worked with dry pulp, that is fibers that had already been mechanically processed and made ready for papermaking.

5.3.1 Sheet formation

Sheet formation is perhaps the most fundamental process involved in hand papermaking. While there are a variety of approaches to sheet formation, in this research I focus on the "dip method." In *The Papermaker's Companion* (2003), Helen Hiebert describes this method as "dipping a screen stretched across a frame into a vat of pulp, lifting the screen out of the vat, and shaking it back and forth—and side to side—so that the fibers interlock and bond on top of the screen surface as the water drains through the screen. The freshly made sheet of paper is then couched (transferred) onto a surface—usually a wool felt—and is then pressed and dried" (p. 8). The specific guidelines that I initially followed were derived from a number of sources on hand papermaking, combined to best accommodate my specific studio situation.

Figure 7

Mould and deckle
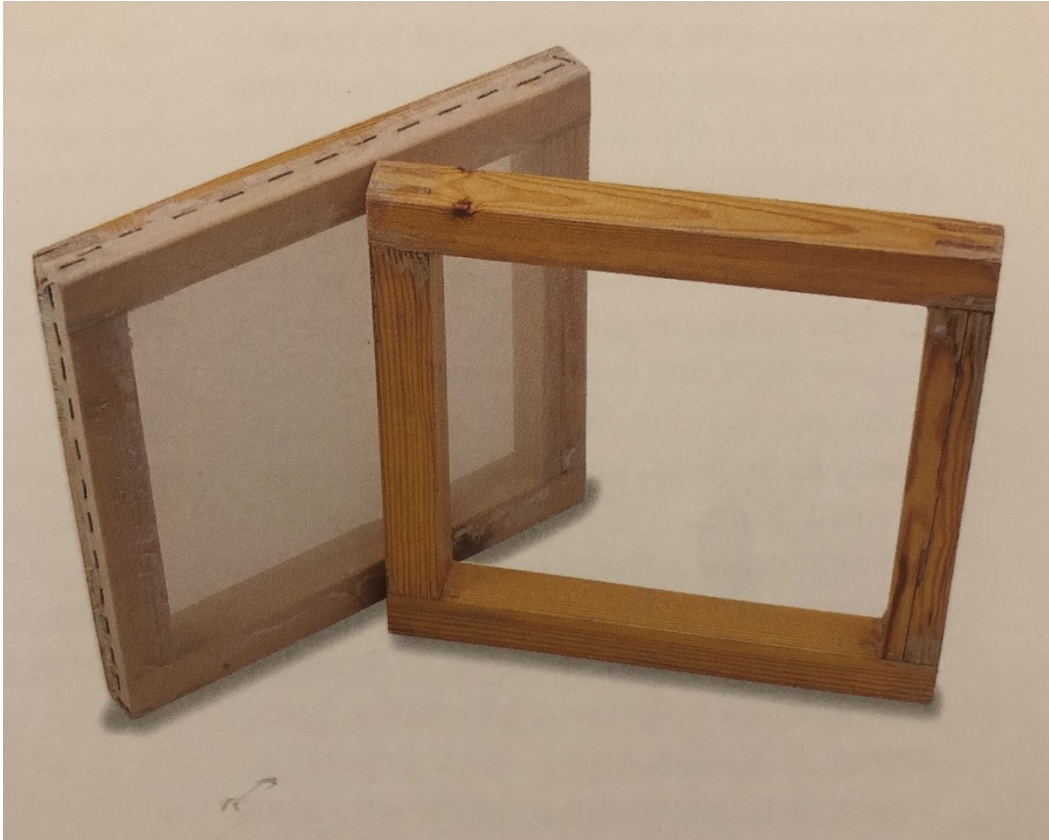
Note. A mould and deckle. From *The Complete Book of Papermaking* by Josép Asuncion, p. 65. Copyright by B T Batsford.

My first attempts at papermaking resulted in evenly formed sheets of paper. These first sheets were made with recycled paper, which I described earlier as being well-suited to papermaking based on the extensive mechanical treatments they have already endured. However, after a number of successful attempts at making sheets with waste paper, I was inclined to experiment with different pulp fibres. These fibres—in dry pulp form—included first and second cut cotton linter, abaca and denim rag. It was at this point—when I began experimenting with different fibres—that I witnessed the rogue nature of material, which I will discuss in further in a moment. Following this, it became evident that each type of fibre that I used required a different treatment, rather than a standardized approach, reminding me to "follow the matter-flow" (Ingold, 2012). I found that I could no longer work in assumptions based on prior experience, projecting past the immediate moment. Instead, I had to correspond with the materials in the

moment. It was at this point that my attention shifted from outcomes to the idiosyncrasies of the materials that appear processually and relationally.

There were a number of surprising events that occurred during my studio exploration of papermaking that reinforced how materials are resistant, and pedagogical in that resistance (Hickey-Moody & Page, 2016). The first example of this involved a curious stain that appeared during my first experiments with cotton linter, which—unlike the recycled paper and abaca fibres I had previously used in the same process—produce a bright white paper material.

Figure 8

Discolouration
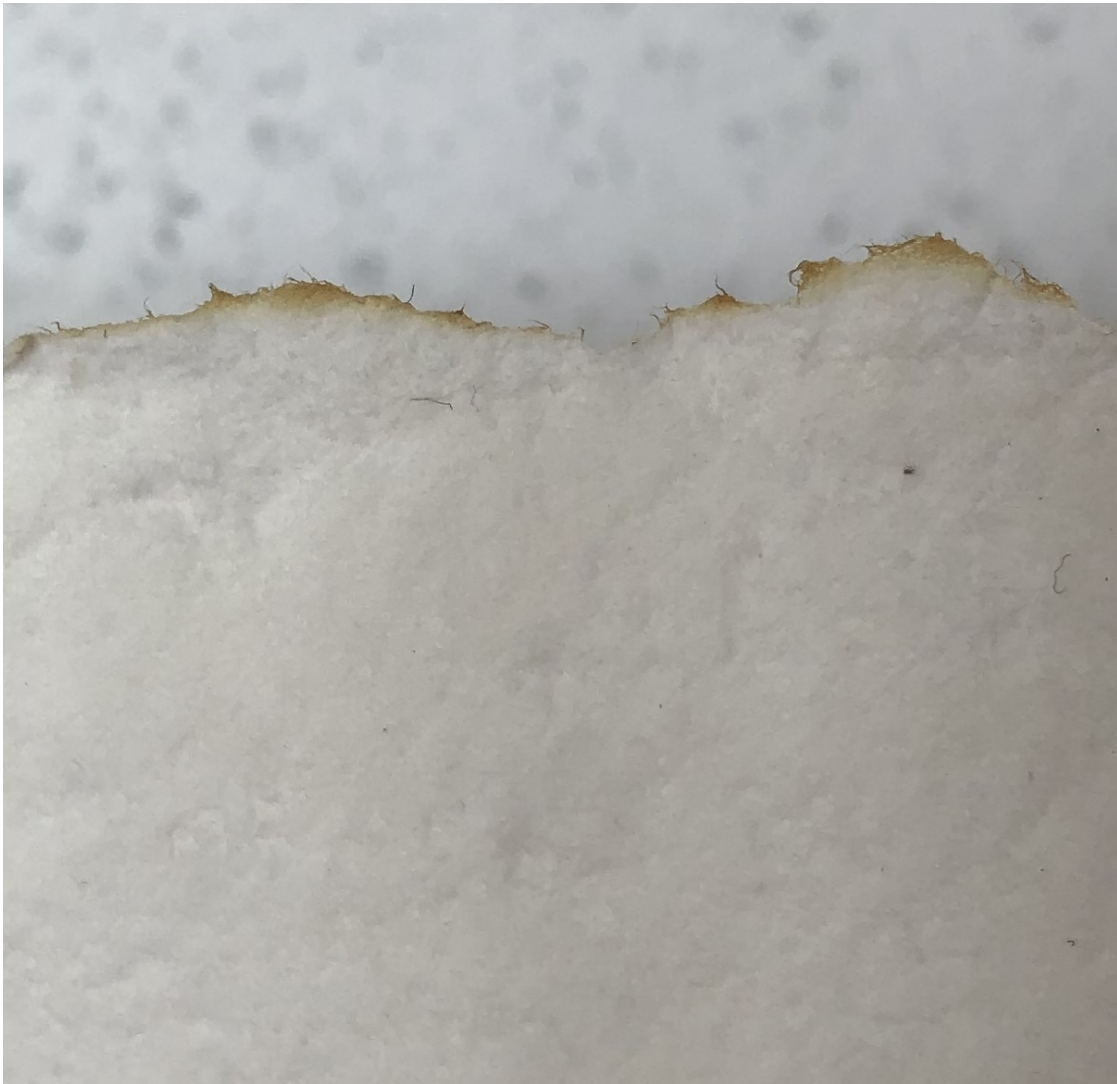
Note. A close-up of the edge of cotton linter paper, where discolouration appeared. [Digital photograph].

This rust-like discoloration appeared predominantly on the edges of my sheets, but at times was more distributed throughout, resembling spores. I also found these stains on the couching sheets used to absorb water from the paper. It is important to note that these stains only appeared after the sheets had been left to dry.

At this point, I realized that following the matter-flow—or perhaps in this case, the paper trail—involved more than I bargained for. The trajectory of the matter-flow in which the papermaking process is implicated does not start in the studio, nor does it end there. If the matter-flow of papermaking was a river, it would be fed by estuaries that connect to other bodies of water and life systems. In the case of papermaking, if we work back from the materials at hand, any one of these estuaries might lead us to the papermills that refine the pulp, to the people that harvest the fibres and to the sun, earth, water and air that allowed the fibres to grow.

Following these flows led me quite literally to the tap that supplies water to my studio. In recent years, the quality of the municipal water supply in Montreal has been a point of contention. According to the CBC, as many as 300,000 are currently exposed to lead concentrations that exceed the recommendations of Health Canada (Harris, 2019). This reality made me consider more closely how the tap water I used may impact the process of hand papermaking.

Further research on water quality as it pertains to papermaking revealed a number of interesting considerations. The literature on papermaking recommends using water that has a neutral pH level. Upon testing the pH level of the water, I found that it was indeed neutral. At this point, I considered other particulars of the water, such as mineral content. Delving back into literature, I confirmed that minerals, such as iron, could create discolouration. Following this information, I proceeded to remove the aerator on the faucet spout, which revealed a build-up of solid, grainy material similar to sand on the mesh capture. I concluded that this was the source of the issue and promptly installed a water filter on the tap. However, despite my efforts, the yellow stains persisted.

In thinking with the new materialisms, I decided to make a list of all the material substances in my studio environment that could potentially lead me to the source of the problem. While doing this, I kept in mind the tripartite framework of medium, substances and surfaces (Ingold, 2007) as a reminder of the complexity of materials in the inhabited environment. I began by itemizing a list of media, paying special attention to what they afford with regards to perception and movement, followed by a list of substances. An example below:

...humid air; slight breeze; dull light; screeching bandsaw in the hallway; bubbling indigo dye vats; earthy smells; tap water...

...concrete; walls; glass; paint; plywood; cotton; plastic; skin...

Next, I proceeded to negotiate what surface interactions might occur. Of course, this is a far more speculative process. My brainstorming brought into focus elements of my environment that I had not previously considered in the papermaking process. For example, the surface of the table that I was working on—a sheet of sanded premium pine plywood—as implicated in the papermaking process. Since the plywood was not waterproofed for exterior use, it retained its porous nature and capacity for material exchange with water. Plywood is also comprised of more than just wood. It is a material culmination of the processes and treatments that are used to prepare it for market, such as the resins used to bind thin veneers of wood together into sheets. In recognizing the dynamic matter contained beneath the veneer of "plywood," I am reminded that "as the underbelly of things, materials may lie low but are never entirely subdued" (Ingold, 2007, p. 10). I had been working with wet processes atop this surface for several weeks, without considering how the plywood, water and paper could potentially intermingle. After placing a plexiglass barrier over the plywood tabletop, the yellow stains ceased to appear on my paper-things. While I am hesitant to say the wood was the "cause," this action did disrupt the chain of transformation. More important than identifying a "cause" here, is the lesson that our practices are not divorced from our environmental contexts.

5.3.2 Dimensionality

Throughout my research I discovered the myriad of ways in which artists have used paper as a sculptural material. Laminate casting and paperclay are just two of the methods that I encountered during my research that are used by artist-papermakers to address the spatial capacities of paper. While my studio was not equipped for experimentation with these methods, I was able to explore the question of dimensionality in other ways.

Figure 9

A ball of wet paper pulp

Note. A ball of wet paper pulp moulded into a sphere by hand. [Digital photograph].

Following the normative process of sheet formation, but using a highly dense paperslurry mixture approximately 10x concentrate, resulted in paper more akin to a plank or a brick. The thickness was only limited by the depth of the deckle wall, which was approximately an inch deep. Typically, after laying a sheet of paper via the dip method (see Section 4.1.1), the papermaker removes the deckle to begin the couching and drying process. However, I left the deckle and mould intact to allow the paper-thing to retain its rectangular structure while the water was slowly draining. As water drains from the paperslurry, the fibres settle within the deckle and eventually, when dry, bond and take the form of the mould and deckle.

This is one of the qualities of pulp—its "form-taking" capacity—which is not a passive orientation, but an active one (Ingold, 2012). This capacity is also evident in how paper takes on

qualities of the surface on which it dries. As Ingold (2007) argues, surfaces are complex sites of activity, or "where the action happens," as phrased by Gibson (1979). Paper has the capacity to reveal some of that action, as I observed/experienced in some of my papermaking experiments. For example, in an attempt to create a smooth surface, I couched the wet paper-thing onto a sheet of plexiglass. Aware of the responsive form-taking qualities of wet pulp, I expected that once it had dried and was peeled from the glass, it would have a flawlessly smooth surface. However, this was not the result. The overall surface contained deep recesses. This suggests the "flux" that occurs across surfaces: the interface between substance and medium. While the substances implicated in this process were obvious—both paper and glass—the media with which they were interfacing was less so. In this case, air and water also co-mingled on the surface. The cavernous recesses, then, are an indication of all these media at work.

Figure 10

Detail of recessions

Note. A close-up of the recessions that appeared on the surface of the paper-thing, after it had air-dried. [Digital photograph].

Returning to my first experiment in dimensionality, once the deckle was removed and enough water had left, the paper-thing retained a rectangular shape. However, at this point it still contained a significant amount of moisture, evidenced by its glistening and soft appearance. There was something intriguing about the visual textility of the thing at this stage that inclined me to haptically engage it. I pressed my fingers into the surface, making note of how the things would correspond in turn. Similar to how the paper-thing retained the shape of the deckle, it also retained the impression of my fingertips. The way that the fibres corresponded with my touch was intriguing, and I knew the paper-thing would experience further immediate transformations as moisture evaporated from it.

Figure 11

Detail of surface texture
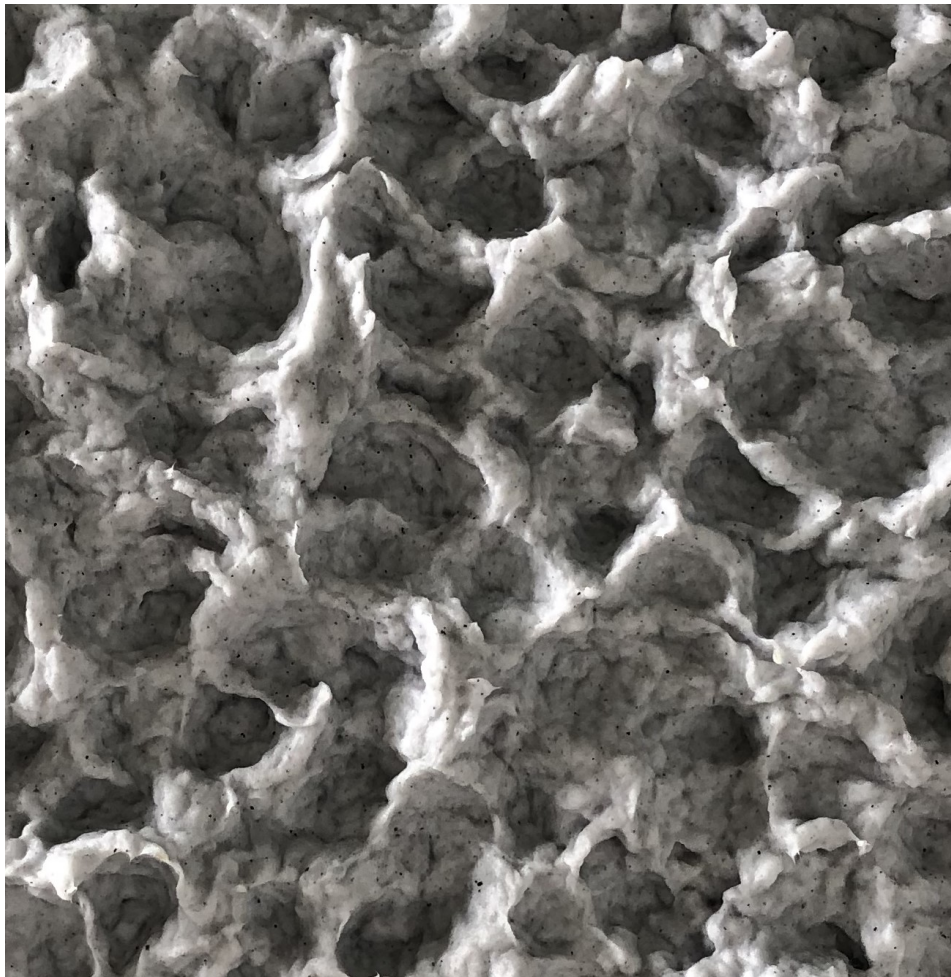
Note. Detail of the surface texture of the paper-thing after pressing my fingers into it. [Digital photograph].

As I write this, I am reminded of what Juhani Pallasmaa (2012) writes about the correspondence between visual and haptic modes of sensing:

> Touch is the sensory mode that integrates our experiences of the world and of ourselves. Even visual perceptions are fused and integrated into the haptic continuum of the self; my body remembers who I am and how I am located in the world. My body is truly the navel of my world, not in the sense of the viewing point of the central perspective, but as the very locus of reference, memory, imagination and integration. All the senses, including vision are extensions of the tactile sense; the sense are specialisations of skin tissue, and all sensory experiences are modes of touch, and thus related to tactility. Our contact with the world takes place at the boundary line of the self through specialised parts of our enveloping membrane. (p. 12)

Pallasmaa describes the oft overlooked sensual dimension of practice. The inexplicable qualities of the paper-thing provoked a deeply embodied response from me, and thus informed the trajectory of the "making." Here, form was conceived through direct material engagement in the moment of making.

While visual and haptic modes of engagement prevailed during my process, I do not discount the intelligence of my full sensorium. Reflecting on these events after the fact, I recognize that the reason why some senses prevail over others is not a result of an embodied sensory hierarchy but is contingent on how I have been taught to experience and know the world. For example, there were several occasions during the papermaking process when my olfactory sense was ignited. I found that certain pulps, when wet, had recognizable odours. However, I often ignored this experiential dimension of the papermaking process. At the time, I did not view odour as consequential to the papermaking process. In hindsight, I consider this to be a misguided sentiment. One instance of this happened during my experiments with dimensionality. As previously mentioned, this process required me to let the paper-thing partially air-dry, which could take upwards of a week. During this time, I noticed a particularly foul odour in the studio that I would later discover corresponded with the growth of mould on the paper fibres (more on this to come).

The experiences described above resonate with Latour's (2004) concept of "learning how to be affected," wherein the external apparatus becomes a coextensive with the body in such a way that can sensitize us to affect. It seems the papermaking process has such a capacity, as well; to act as intermediary between the material body of the artist-papermaker and the nonhuman

material bodies involved in the process, in a way that produces new experiences of the world. This, too, corresponds with the concept of affordances (Maapalo & Ostern, 2018) and it begs the question: what do the material processes of papermaking afford our bodies in relation to pedagogy?

...

Around the time that I began experimenting with dimensionality, *Canadian Art* released *Antimatter*, then the most recent issue of the magazine (December 2019). I was drawn to the theme of this issue and decided to incorporate it into another papermaking experiment. First, I shredded the magazine entirely, including both covers. Through my research on papermaking I learned that magazine covers are often coated with white clay (also known as kaolin), which creates a smooth and glossy surface that is suitable for high quality photographic reproductions. As an aside, I was surprised to learn that kaolin is also a radioactive material—though it is not considered hazardous to human health. The presence of kaolin can be observed during the papermaking process. According to my research, when the coated paper and water are mixed together in the blender, the clay responds by foaming. I observed this interaction during my experiment.

Following the process described in *Section 5.3*, I proceeded to make paperslurry from the magazine material. My intention was to reconfigure the magazine into a singular block/paper-thing, as with my previous experiment with dimensionality. Following the dip method of sheet formation, I filled the deckle to the brim with the magazine paperslurry. Using a sieve, I collected the remaining paper fibres that were still suspended in the vat of water and poured them into the mould as well. Once again, I wanted my reconfigured paper-thing to retain a rectangular shape, so I left it in the mould and deckle to drain. This time I wanted to ensure the paper would not grey, so I decided to expediate the drying process by pressing the water out by hand. However, it was still necessary to allow some of the water to drain naturally in order for the fibres to bind together. Therefore, I left it to drain in the mould and deckle until the following day.

When I returned to the studio, the material had solidified enough to allow me to remove the deckle that was structurally supporting it, though I noticed that it appeared to have retained more water than the paper-thing from my previous experiment. Now I was able to begin pressing some of the water out by hand. I had to be careful not to press too firmly or force the water out too quickly, causing unwanted structural changes in the form. This process required great care to

exert even, limited pressure across the page. It required a responsiveness to the way the paper-thing corresponded with my touch. For example, when I manually pressed water out of one section, it would often result in an influx of water to another area that would cause a section to bulge; managing these "becomings" required the attention of an even and gentle hand. Furthermore, if the water was removed with too much force, the fibres would not have time to bind and cracks would appear, causing the paper-thing to lose structure and crumble. I responded to this by adding water to reconstitute the fibres somewhat in those problematic areas. While this facilitated some adhesion or stop a crack from growing, it did not completely solve the issue.

Figure 12

'Remixed' issue of Canadian Art Magazine

Note. Close-up of my 'remixed' issue of *Canadian Art Magazine*, during the third day of air-drying. [Digital photograph].

As in my first attempt to create a heavy sheet on paper, I noticed once again the appearance of grey areas. However, unlike my first attempt it had a subtler appearance. It was not until months later that I made a connection. I had left some wet pulp discard in a container for several weeks during the lockdown caused by COVID-19. I had intended to use it the next day, but my next day at the studio—due to the pandemic—was almost a month later. When I finally retrieved the paper pulp—cotton linter pulp—it was no longer bright white; it had greyed significantly, with some areas more effected than others. Later, I realized that it had become mouldy. This had likely happened with the thick sheets of paper I described earlier, due to the fact that they were holding water for a significant period of time. I approximate that my magazine experiment might have yielded different results due to a number of factors. Perhaps the furnish or clay in the magazine paper prevented the mould from flourishing, or perhaps the way that I removed water from the material to speed up to process had an impact.

Figure 13

'Remixed' Canadian Art magazine, dry
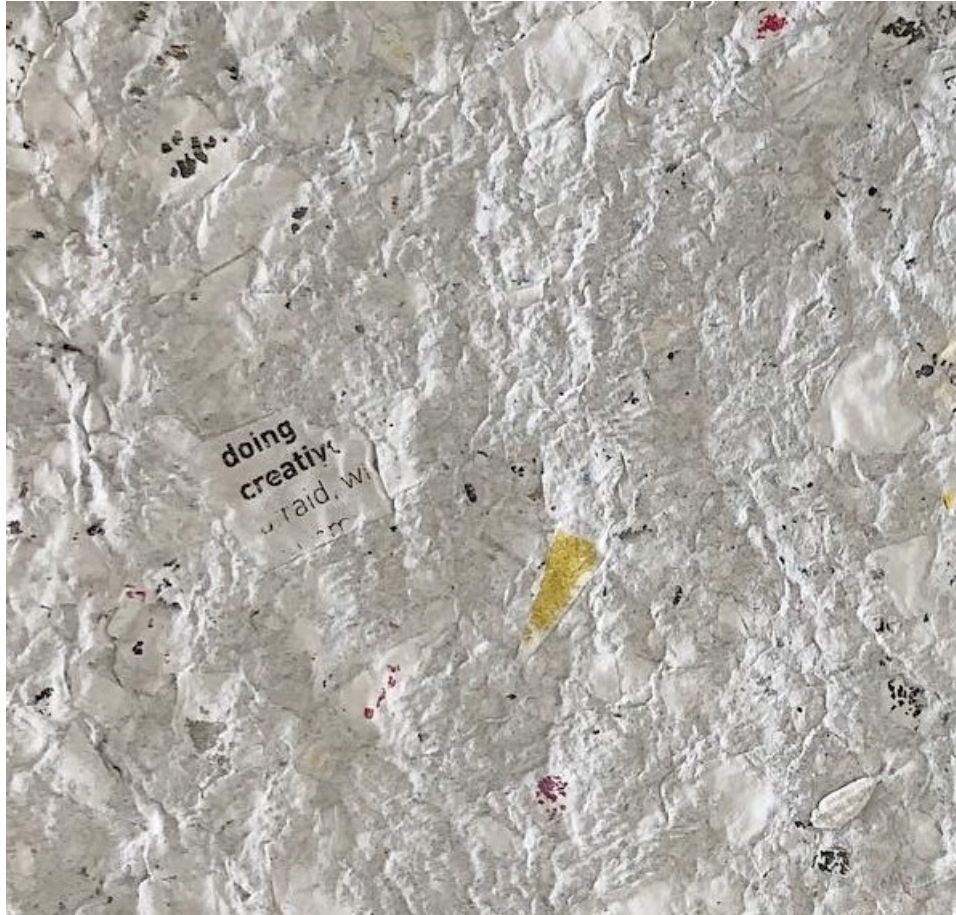
Note. A detailed close-up of my 'remixed' *Canadian Art* magazine, dry. [Digital photograph].

5.3.3 Colour

The third phase of my studio research involved exploring the materiality of pigment by adding colour to pulp. All fibres contain a natural colour, but many papermakers will also add colour to paper pulp by combining it with dye or pigments. There are advantages and disadvantages inherent in both methods that include cost, availability, stability, safety and preparation time.

Pigment is a coloured powder that can be derived from organic or synthetic materials. Unlike dye, it is not water soluble. Therefore, it must be combined with a binding agent in order to adhere to the paper pulp. I used a powdered retention agent for this purpose, which had to be prepared in advance. To prepare retention agent, the powder is combined with water and mixed in a blender for approximately 90 minutes. Once the powder crystals have completely dissolved

in the water, the stock solution is ready for use. Stock solution must be further diluted 10:1 with water when added to paper pulp. The liquid retention agent has a limited shelf life, so it works best if used immediately. Ingold (2012) has argued that we should understand materials for what they do, rather than what they are—that is, as things that can only be understood contextually and relationally. He writes, "materials do not exist as static entities with diagnostic attributes; they are not 'little bits of nature,' as science studies scholar Karen Barad (2003, p. 821) puts it" (p. 434-5). This makes good sense for the process of papermaking, particularly when working with pigments. For example, the potency of the retention agent is contingent on a number of factors, including the electromagnetic charge of the pulp fibres. Therefore, the outcome cannot be determined prior to use. There is no precise recipe one can follow when using retention agent to bind pulp and pigment. Instead, the artist-papermaker should slowly add small amounts of retention agent to the pulp-water-pigment mixture and pay attention to the colour of the water, to how materials respond in the moment. Prior to the addition of retention agent, the pigment will be suspended in the water. As the binder is added, the pigment particles will begin to move from the water to the fibres. Once the water is relatively clear, that is an indication that most of the pigment particles have bonded with the pulp.

Figure 14

Combining pigment and pulp

Note. Combining pulp, pigment, retention agent and water in a blender. [Digital photograph].

Once the process of pigmentation is complete, the coloured pulp can be stored wet in an airtight container for a short time, but for long term storage it is best to store dry. As I have mentioned, under certain conditions, moist pulp can grow mould. I stored each of my coloured wet pulps in sealed ten-gallon containers over the course of a week, using small amounts at a time in various experiments. After all, these materials do have a life of their own that continues on—as many of my experiments have confirmed—regardless of the presence of humans.

Figure 15

Pulp combined with magenta pigment

Note. Cotton linter pulp after is has been combined with magenta pigment. [Digital photograph].

What I found during my experiments with coloured pulp is that there are infinite ways to configure the materials. One of the approaches I used involved blending multiple colours to produce an entirely different colour of pulp that still contained traces of the original colours. Combing colours together in the paperslurry vat, without the use of the blender, creates an effect akin to marbling. Another approach commonly referred to as "pulp painting" involves the direct application of wet pulp to a wet sheet of paper pulp. This can be achieved through the use of a squeeze bottle, spoon, or just using one's hands.

Figure 16

Paper made with pigmented pulp

Note. Examples of paper made with pigmented pulp. [Digital photograph].

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While there were many technical issues about making that were raised through my experiments with colour, what was most surprising were the ways in which this process raised ethical questions regarding material consumption. Initially, I was drawn to pigments because they are considered to be more lightfast and vibrant than dyes (undoubtedly, the virtue of achievability was inscribed in me during my fine arts training). However, my research/thesis has led me to consider the deeper implications of using materials, such as ethical concerns related to the environment, accumulation and consumption. Furthermore, it has led me to consider what values are hidden beneath the surface of our art educational curricula. For example, why does permanence and material stability take precedence over environmental stewardship? And whose values are these; the collective, or the capitalist status quo?

I believe the investment in permanence and stability can be partially attributed to the hegemony of representationalism (Bolt, 2004), which instills in us the impulse to figure the world of materials in static form—a futile project if there ever was one. In the art world, we know that—despite the best efforts of artists and holding-institutions—art, as with everything else, is only a punctuating state of materials, a stopover on the path of perpetual becoming (Ingold & Hallam, 2014). If this was not the case, we could do away with the profession of art

conservation in its entirety; in a world of static materials, we would have no need for a profession that exists to restore and prevent the "deterioration" of art objects.

5.3.4 Embellishment

This fourth and final section of the discussion is about the processes of layering and embellishing handmade paper. This involves embedding materials into the wet surface of the paper-thing. I experiment with two approaches: 1) pressing materials into the wet surface of the paper and 2) embedding materials between layers of paper. For these experiments, I used scrap wool yarn that was discarded by my studio mate and dried plant material to embellish the paper-things. These materials are both commonly used by papermakers in this process, which is not unexpected given the milieu's inclination towards sustainable practices that make second use of waste material.

I began with the yarn. First, I laid a sheet of paper via the dip method and transferred it to a screen. Following this, I placed a few pieces of yarn on the surface. Next, I made another sheet of paper that I laid atop the first sheet, sandwiching the yarn. I expected that yarn, an organic material, would work well in the papermaking process. However, the end result contradicted my prediction. The wet pulp disintegrated around the yarn. I attempted a similar experiment, this time using dried flower petals. I couched the paper-thing onto the window glass and left it to dry, along with the other products of my experiments that day.

Figure 17

*Paper drying on my studio window*

Note. Paper couched to my studio window, drying. [Digital photograph].

Following this, it was more than a week before I returned to the studio. An intense heatwave had struck the island and temperatures had risen upwards of 40 degrees Celsius. It was easy to imagine what my studio space must have felt like during that time, and so I stayed away. Once the temperature cooled down, I returned to the studio to deal with my paper-things from the previous week. At this point, they were well-adhered to the window. Peeling them from the glass produced a dramatic sound, similar to peeling masking tape off its roll.

Something interesting and unexpected transpired from my paper experiment with the floral material. On the surface of the sheet—the side that was not adhered to the window—there appeared colourful stains of yellow, pink and blue. The pigment contained within the petals had seeped into the fibres of the paper. While I was away, a confluence of forces—fibres, waters, flower petals, glass, air, sunlight and heat—were at work, picking up where I had left off in the papermaking process.

Figure 18

Paper embedded with floral material
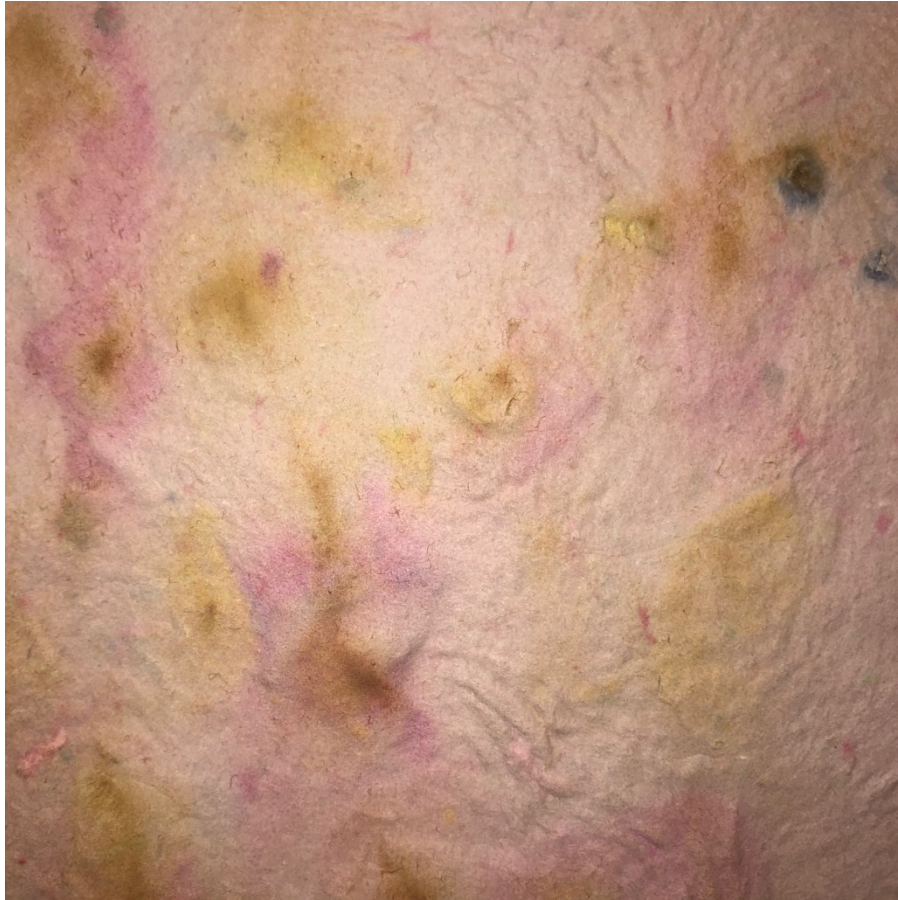
Note. Detail of the results from my experiment using dried flower petals. [Digital photograph].

A few concluding remarks on my experiments with embellishment. Once again, with regards to materials, the discrepancy between our imaginative capacities and what they actually do, appears. According to the normative definition contained within the hylomorphic framework, making things involves the transposition of form (concept) onto materials (Ingold, 2013). These examples illustrate that even after human involvement/engagement in the making event concludes, materials will continue to undergo transformation. Therefore, ideas (form) cannot override the will of materials.

Furthermore, I contend that working within a hylomorphic framework can lead to unnecessary disappointment for the artist-maker, as it did for me on several occasions. In the early stages of learning, disappointment can be detrimental to future engagement. If form emerged through the imagination of the artist- alone, we would never experience disappointment.

However, as makers know, a chasm that often exists between our idea and the result of our making: evidence of the active nature of materials. In making things, sheer will alone cannot force materials to embody qualities beyond the realm of their affordances. For this reason, I believe it is crucial for art educators to embrace a relational and processual approach to pedagogy that enables learners to "follow the matter flow" and correspond with it (Ingold, 2012).

Chapter 6

6.1 Conclusion

Reflecting on my research in papermaking brings to mind the work of French writer George Perec, specifically his experimental novella, *An Attempt at Exhausting a Place in Paris/Tentative d'Epuisement d'un Lieu Parisien* (2010). This novella is a collection of observations made in Saint-Sulpice Square in Paris, where Perec spent three days describing "that which is not noticed, that which has no importance." The text resembles an inventory of sorts, an innocuous list of things caught up in the flows of life:

—Stone: the curbs, a fountain, a church, buildings…
—asphalt
—Trees (leafy, many yellowing)
—A rather big chunk of sky (maybe one-sixth of my field of vision)
—A cloud of pigeons that suddenly swoops down on
the central plaza, between the church and fountain

A half-full 96 goes by
New lights turn on in the café. Outside the dusk is at
its height
A 63 goes by full

What is immediately evident here is the impossibility of an "exhaustive" account. With every phenomena Perec chooses to attend to, something is inevitably omitted. Whether it is a café in Paris, or the studio, all places, people, events and the materials that constitute those things are caught up in the flows of life and therefore ever-changing, never-knowable, and "incomplete" (Knorr-Cetina, 2001). While there may appear a surface level of "sameness" to those that choose to stand outside of the process of becoming, materials always have another story to tell.

The same could be said of practice-driven research. As "an apparatus of capture" (de Assis, 2018), experimental practice-driven research is akin to holding a bucket in the rain: certainly, water will accumulate in your bucket, but it would be impossible to catch every drop. However, I do not consider this a limitation of experimental artistic and creative research. In fact,

it exemplifies its strength: the infinite generativity produced through our encounters with/in the world of materials. Bearing this in mind as I conclude my research journey I ask: how can I "gesture to the so-much-more out there" (Tsing, 2015)?

My work with papermaking has unfolded in some of the ways that I had anticipated. First, working through/within a research-creation framework provided me with an account of practice that destabilizes normative understandings of making and materials as instrumentalist or mechanical. Through a critical reflexive praxis, I described how materials—in all of their *vibrancy* as incomplete-epistemic objects (Knorr-Cetina, 2001)—resist form, departing on their own trajectories independent of human intention. As I have said elsewhere, this is indicative of the "pedagogy of resistant materials" (Hickey-Moody & Page, 2016), which provided space for problematization, sometimes launching me on unexpected paths of inquiry.

At times, these paths were of a practical and technical orientation, directly related to the processes involved with making paper. With that being said, "practicality" in this context, should not be conflated with "benign." Even learning processual aspects of papermaking revealed the complex "thinking-in-making" that occurs in practice (Barrett, 2007; Bolt, 2007; Ingold, 2013; Sennett, 2008). However, transcending the realm of the habitual into the generative and constructive from with/in practice, requires an acute attention to materials.

I must admit that when I began learning the process of hand papermaking, my focus was not on materials. Instead, my primary concern was the bodily execution of technique and my ability to replicate the movements and memorize each step of the papermaking process. Undoubtedly, the instructional resources on papermaking that were available to me played a significant role in my learning process. However, this information alone did not give me a sense of understanding the process of papermaking. What was missing was a knowledge of materials and their generative qualities, which I was only able to develop through sustained engagement with the process.

The reader might assume that from the outset of my research, I was aware of the dynamic nature of materials. After all, prior to my studio research activities, I read extensively on the subject of the new materialisms. Initially, I considered the new materialisms to be my theoretical framework, as well as the "lens" through which I viewed practice. However, in hindsight, I now consider the practice of hand papermaking to have been my "lens" into the world of materials.

The new materialisms are and continue to be an indispensable component of my research. In particular, I credit the writings of Barbara Bolt and the collection *Carnal Knowledge:*

Towards a 'New Materialism' through the Arts (2013) with initially provoking me to consider the value of materials within artistic practice, beyond their signifying capacities. However, for all that new materialist discourse has contributed to my research, it did not provide me with knowledge of materials. Based on my experience conducting this research, I conclude that an appreciation for materials, their qualities, what they do—a "knowledge," if you will—can only be gained through direct engagement. As Ingold (2013) argues, "the mere provision of information holds no guarantee of knowledge, let alone of understanding" (p. 1). Therefore, one must gain a practical understanding—quite literally, hands in materials—alongside of a new materialist theoretical framework.

The "practical" understanding of materials to which I refer is the tacit and embodied knowledge that grows "through the experience and practice of a craft, but which adhere so closely to the person of the practitioner as to remain out of reach of explication or analysis" (Ingold, 2013, p. 109). This resonates with what Gregory Bateson (1973) coined as "deutero-learning," which is learning that "aims not so much to provide us with facts about the world as to enable us to be taught *by* it" (Ingold, 2013, p. 2). Eventually, after prolonged engagement with the process of hand papermaking, the world of materials began to reveal itself to me. Through research-in-practice, I developed an "education of attention" (Gibson, 1979; Ingold, 2013) wherein I learned to "see things, and to hear and feel them too" (Ingold, 2013, p. 3). Once I was able to orient myself in practice through an "education of attention," I began to notice differences in my process. For example, instead of relying on instruction to guide my exploration, I corresponded with the subtle (and sometimes, not-so-subtle) gestures of the materials as they unfolded relationally and processually. When we correspond with the materials—instead of running roughshod over them—we can appreciate and learn from their intelligence and creativity. At this point in my research, materials—no longer presumed passive—began to direct the process of hand papermaking.

While materialist scholarship was at least partially responsible for inspiring me to pursue this research, it could not provide me with a shortcut to "knowing" materials. Instead, I had to be taught by the materials themselves. As I have alluded to elsewhere, there is a distinct difference between learning "about" something and being "taught" by something (Ingold, 2013). According to Ingold (2013), learning "about" something involves "looking back" in order to "account for trends and patterns," and the purpose is essentially documentary. On the other hand, being "taught" by something involves "moving forward" through reflective-praxis, driven by a

"transformational" imperative (Ingold, 2013, p. 3). In this example, Ingold is discussing the differences between ethnography and anthropology, but this can be more broadly applied to art-related research as well. Therefore, while there is certainly nothing wrong with learning "about" something, I do not believe that it is the primary goal of art education.

I think many art educators would agree that the goals of art education are not instrumentalist. It is not "means-end," or a "closed system" as Sennett (2008) would say, with the purpose of teaching skills related to drawing, painting, pottery, or what have you. For one, most learners—even those who pursue art education at a tertiary level—are probably not going to become "professional" artists. Those who have been to art school can verify this. Instead, for myself—and I am willing to bargain, for many others in my field—one of the primary goals of art education is to "open up paths of discovery that [we] can continue to travel for years to come" (Ingold, 2013, p. 3). As art educators, if we want to "open up paths of discovery" for learners, we can begin with creating the conditions within our learning environments that allow for open-ended material exploration is not rooted in representationalism. However, I will not address the "hows" of that here; that is a project for another time!

At this point I have addressed some of the practical considerations raised in this research related to hand papermaking, learning and art education. However, my engagement with the practice of hand papermaking also raised questions of a particular philosophical and ethical inflection, more broadly related to "making." It is within these fertile grounds that I wish to stake a claim to future inquiries.

The necessity of engaging with the material world—as if, says Ingold (2007), there is anything outside of that—has never been more critical. In these unprecedented times that some refer to as the "Anthropocene," how might we enact the political imperative underpinning the materialist approach in our pedagogy? I argue that the materialist paradigm has the potential to animate the currents of the matter-flow, in which all materials—and by extension, makers/material-users are entangled—thus, retrieving us from the imaginative trappings of the insular artist studio and propelling us into a "world ecology" (Patel & Moore, 2017). This brings to mind Ingold and Elizabeth Hallam's (2014) comments on clay and making pottery,

> The story of clay does not begin with the potter, since the material he throws on the wheel has already had to be dug out from the ground and kneaded so that it is sufficiently pure and of the right consistency. Before that, it was sedimented through the depositions of water-bone particles, over eons of geological time. And when does the story end? On

leaving the pottery, the life of a pot has scarcely begun: think of all the hands or heads that will carry it and the substances it will hold until, cracked and discarded, it is returned to the earth. Even this does not rule out the possibility that it might, one day, be unearthed by an archaeologist and pieces together from the fragments, only for its life to continue as a museum exhibit. (p. 2)

The same could be said of other material practices, such as papermaking. As with the clay pot, the making of paper does not begin at the papermill or the artist studio. This is just one stopover on the journey of perpetual making/becoming. Furthermore, it implicates us—artists, teachers and researchers—in the overriding systems of production and resource extraction involved with most materials. I think it is reasonable to assume that many artists do not consider the life of the artefacts they produce outside of the studio context, except to participate in exhibitions or to end up in a museum or gallery collection. But what of the "failed" works of art? What is the life of such things after they reach the landfill? What future "becomings" do they contain?

Our current ecological crisis demands more attention to materials and processes of making (Carr & Gibson, 2015). Blair (in press) suggests that for art educators, our "pedagogical intra-actions with art materials start by considering their origins, which includes the environmental impact of manufacturing, transporting, and disposing of or repurposing a given material." Repurposing materials in the age of built-in obsolescence is not only profoundly pragmatic, but resoundingly political. As Chantal Carr and Chris Gibson, of the Australian Centre for Cultural Environmental Research write, our ability to "work with materials, and make, repair or repurpose physical things, are vital skills, for a future where such resources become increasingly limited and extreme events related to a shifting climate are more common" (Carr & Gibson, 2015, p. 2-3). One of the aspects of paper by which I was originally enchanted was its capacity for reuse. Unlike, for example, in painting—though I do not want to fully discount paintings' potential for reuse—where you cannot return the paint to the tube once it has been placed on the canvas, paper can be remade again and again. While it is not necessarily the contemporary perspective, early modern papermakers did not conceive of any paper materials as "waste," in fact the term "waste paper" denoted not a useless thing, but a thing not yet used (Werrett, 2019).

While it is easy to speak of these ideas, I fear that discussing things in such a manner gives way to rational thought. While discourse has its merit, I argue that if we want to create the conditions for truly transformative encounters with the world of materials—that can enable us to

surpass the purely performative domain of speaking about things and move into the realm of enacting an ethic—we must first step back into our bodies. Doing so is an inherently political act; the longstanding project of Western society has been to alienate us from our bodies and thus, the world of materials at-large. While discourse has merit, it has been my experience that—on occasion—thought preceding action can have the adverse effect of corking it off at the source. From my perspective, speaking of things before practicing them is a mortal sin within education, much like the misuse of the CAD system (see *Section 2.1*).

Back to the topic of bodies—how do we begin to reclaim ours, in all of their complexity—as teachers, learners, researchers and artists within a system so deeply entrenched anti-materialism? Historically, formal education has played a foundational role in the process of bodily alienation, teaching us to "reason why," against the material conditions of the body itself (Martin, 1985). However, this is a post-enlightenment condition, as the body has been a central fixture within premodern and non-Western societies and cultures, as a site of unbounded knowledge.

As Smith (2014) highlights, the human body was an integral component in the pedagogy of early modern European workshops, "warming, blowing, handling, manipulating, sensing, tasting and providing force and dexterity, to name just a few; as a source of substances used in manufacture—including urine, excrement, blood, ear wax, and saliva; and as a model for natural processes, since the fermentation, digestion purging, and excretion performed by the human body provided a conceptual framework for the transformation of materials in nature" (p. 46). Furthermore, the full sensorium was employed in the workshop as a way knowing materials, as indicated by surviving craft recipes of the period. Measurements, for example, were not restricted to scientific instruments and processes based in visuality, but also on touch, taste, hearing, and smell. For example, records indicate that "the purity of tin was tested by biting to see whether it made cracking sounds, "like that which water makes when it is frozen by cold'" (p.47). Within the neoliberal progress narrative, it is considered unfashionable to look to the past before modernity for answers about the future. However, if we want to get back in our bodies, the past might be the place to start.

The ways of knowing described by Smith (2014) could be easily dismissed as medieval quackery. However, there is something pedagogically significant transpiring here. First of all, this way of working with materials not only produced objects—and fine objects at that, many of which can still be found in the most well-guarded vaults of state-run museums and the cultural

trophy hunters of the billionaire class—but, it also generated knowledge about the nature of materials, growth and life (Smith, 2014). The latter achievement is particularly significant for those of us interested more embodied ways of doing pedagogy.

As I have mentioned earlier, this research will conclude on the heels of my entry into doctoral studies in the Department of Art Education at Concordia University. With that, it would be prudent to discuss my future research trajectory that will build on the foundations of my MA thesis research. During my PhD, I will continue to explore the pedagogical potential of the hand papermaking process. However, this work will extend beyond the borders of solitary studio and engage more deeply with the cultural histories and economies of pulp and paper through material practice. More specifically, I will explore paper, making and pedagogy in the context of a "world ecology" (Patel & Moore, 2017), connecting artistic practices to global trends and issues such as transnational capitalism, colonialism and "nation-building" efforts, labour and climate justice.

Through papermaking practice, I will engage these issues within a "more-than-representational" (Lorimer, 2005) and "material-semiotic" framework (Bolt, 2013). This means using art—specifically paper and the process of papermaking—to move beyond the demystification of social problems and associations with "cognition, symbolic meaning, and textuality" (Thrift, 2008) and into the realm of transformative pedagogy. Adjacent to this inquiry, I will also explore the pedagogy of artisanal workshops (global pandemic permitting) and the "social life of making" (Carr & Gibson, 2015) through direct engagement, experiential learning and collaboration. In the space between these two lines of inquiry, my goal will be to identify where they overlap.

Thus, I conclude my MA thesis research journey. I will end by reiterating that craft and otherwise analog processes of "making" continue to have profound value within art education and the broader field of artistic research. Materials—in all of their resistance—offer us new ways of knowing and being in the world, that is, the world of materials. In fact, as Carr and Gibson (2015) claim—this has never been more important.

But don't take my word for it. Find out for yourself.

Figure 19

A bundle of newspapers, decomposing

Note. A decomposing bundle of newspapers found during a walk in Montréal. [Digital photograph].

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