

TANGIBLE INQUIRIES: A STUDY OF AROMA MATERIALS AND SOURCES IN THE
BUILT AND BOTANICAL ENVIRONMENTS OF GRASSE, FRANCE

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Abstract

In the humanities, arts and social sciences smell is often framed as a mode of invisible information, independent of observable and tangible sources of odours, or the structural, embodied and ecological contingencies that afford the activity of their engagement or perception. This framing not only serves to reinforce our already ocularcentric “sensory order” (Howes, 2005a), but also reinforces the visual biases of contemporary communication and information cultures. This dissertation argues that smell, along with many other sensory phenomena, is further abstracted by predominantly neuro- and logo-centric epistemologies that privilege acquired representational knowledges over more directly experiential, corporeal and self-directed ways knowing. Building on preliminary fieldwork in Ontario and France, this site specific and source centric study investigates the selection, exploration and uses of botanical and synthetic aroma sources and materials as multimodal resources in the contexts of cultural mediation, scent-themed interaction and ecologically situated inquiries within the built and botanical environments of the ‘world’s perfumery capital,’ Grasse, France. This grounded study draws on methods of sensory ethnography, multimodal analysis and my own ‘tangible inquiry’ to examine the ecological, sociocultural and structural contingencies that afford directly experiential encounters with aroma. This research has implications for Canada's increasingly ‘scent-free,’ and sensorially *anaesthetic*, learning environments, which continue to privilege visually-biased, mind-over-matter modes of learning, knowing, and communicating.

Dedication

*In memory of my grandmother,
Marjorie McBride*

I dedicate this dissertation in loving memory to my grandmother Marjorie whose appreciation of plants, flowers, gardens and perfumes inspired my earliest and most joyful inquiries with aroma.
[Smell prompt: ‘Musc Marjorie’]



Image 1. Marjorie McBride

Acknowledgements

As a beginner to so many of the domains of knowledge engaged in this study, it has been my experience that scholarship does not materialize out of thin air, but is cultivated, tended, weeded and brought *to life* by many heads, hearts and hands—just like a garden. The knowledge created in this dissertation similarly draws on the contributions of time, energy and insights of numerous persons.

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version with materials I have specified below. Some of these materials can be found in local supermarkets and health food stores selling essential oils. A list of online vendors for these materials is featured in Appendix A: Sources. Please review the information below to prepare for your reading.

Aroma materials and sources

The Aroma Inquiry kit I created for my committee and evaluators consists of an off-the-shelf, polypropylene outer container that contains a smaller inner container that is fitted with a 3D printed housing that was specially designed to hold the liquid substances upright. The kit includes clear, amber glass bottles of liquid aroma materials, aluminum canisters of loose raw materials and a set of paper scent strips [specific materials are itemized below].



Image 3. Aroma essences

Processed aromas in liquid form

- Vetiver essential oil
- Cistus Labdanum resin
- Synthetic Jasmine fragrance oil
- Jasmine Grandiflorum Absolute
- *4711 Eau de Cologne*
- Rosemary essential oil
- Neroli essential oil

- Synthetic Iris fragrance
- *Musc Marjorie* (a perfume I created at Galimard)

Raw and semi-processed aroma materials

- Rosemary (loose, dried)
- Frankincense tears
- Orris root
- Orris root concrete

Guidelines for using aroma materials

Before using the materials, please consider the following guidelines. However common sense, they will contribute to the quality of your experience and the accuracy of your assessments:

- Blow your nose [obvious, but often neglected!]
- Wash and dry your hands with unscented soap.
- Avoid wearing fragrance or using the aromas in the presence of strong foods.
- Try not to smell on an empty stomach—pleasing aromas can induce hunger.
- [If using scent strips] Always apply the scent to the narrow end of the strip, this part of the strip can be bent upwards if you wish to place the strip on the table—you can also place them in a mug or cup with the scented end facing up.
- If you do not have scent strips, you can use bits of paper, or even Q-tips, for the liquid scents.
- Coffee beans do not ‘reset’ your nose. To avoid olfactory fatigue, use the aroma materials in a well-ventilated environment and take breaks between interactions.

For more applied and specialist practices involving aroma, I recommend: Mandy Aftel’s *Fragrant* (2014), Jancis Robinson’s *How to Taste* (2000), Jean Carles’ *A method of creation in perfumery* (2006), Edmond Roudnitska’s *Art of Perfumery* (1994) and the Wine and Spirits Education Trust’s (WSET, 2017) *Systematic Approach to Tasting* (SAT).

Aroma inquiry and smell prompts: ‘How To’

The vignettes in chapters four and five feature in-text multimodal ‘prompts’ involving both smelling and directly interacting with different forms of aroma materials. There are *two kinds* of prompts, each of which thematically mirrors the types of aroma interactions featured in these chapters (i.e., reflective smelling versus tangible inquiry and interaction). The first kind of prompt, the ‘smell prompt,’ functions as a kind of *volatile* in-text citation whereby you contrast your own impressions with those described in the text. The second kind of prompt, the ‘aroma inquiry’ prompt, involves tangible and multimodal interactions that will involve observing and physically examining the *properties* and *qualities* of selected aroma materials. Before you begin exploring the materials or preparing to undertake the prompts you will want to review the practical considerations below.

Before you begin: practical considerations

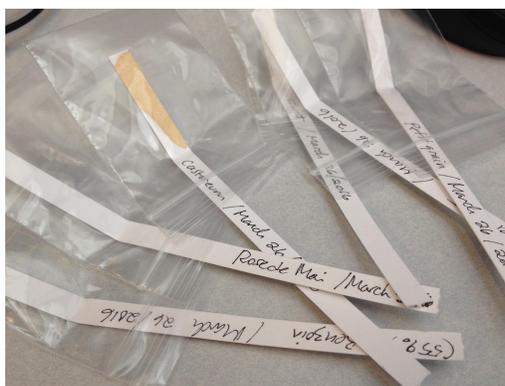


Image 4. Paper scent strips or ‘mouillettes’

When you begin a chapter, you will see a note about ‘featured aromas’ that specify the materials that you will need for your reading. These prompts are intended as a multimodal extension of the text that contributes to your consideration of the analysis and interpretations of described sensory stimuli and phenomena, rather than an interruption.

Tips for handling and care

How to avoid cross-contaminating bottled materials:

- Keep liquid essences upright.
- Refrigerate liquid essences.
- Keep all aroma materials away from direct heat and sunlight.
- Open bottles carefully—smaller lids drip!
- Ideally, have paper towel and rubbing alcohol nearby to wipe the lid/bottle openings after each use [do not use the same paper towel on multiple bottles].
- Wash your hands or wipe your fingers with rubbing alcohol between interactions to avoid cross contaminating the materials.
- Place the lid tops upright next to the bottle (If you have purchased your own materials be sure to clearly label the name of the essence on the lid.). If the sticker has come off, sniff the lid before placing it back on the bottle to ensure it is the right one.
- Safety note: citrus-based materials, such as the Neroli, are faster to oxidize and should be disposed of after 12 months as they may become phototoxic.
- A lid can always be tighter!

Introduction: Aroma sources in context



Image 5. Aroma sources as a multimodal resource

Background and context

Beyond its celebrated association with emotions and memories, smell is “the only sense with receptors directly exposed to the environment” (Martin, 2013, p. 1). Unlike other modes of sensory perception, such as vision or hearing, smell is distinguished by its dependence on *chemical* stimuli, in the form of volatilized odour molecules, that must make direct physical contact with receptors high inside the nose, and at a sufficient concentration, to be perceived (Martin, 2013). From this functional standpoint,¹ smell (olfaction) is an integration of anatomical, biophysiological, psychological and neuroscientific interactions involving chemical stimuli (chemoreception) that powerfully influence our behavior, perception, cognition and emotions. For non-scientists, however, these latter affective, hedonic and symbolic dimensions of *how smell works* are generally more accessible, and indeed attractive, than molecular accounts of *what smells are*, which is complicated by highly abstract models and specialized scientific

¹ G. Neil Martin’s *The Neuropsychology of Smell and Taste* is an accessible overview of smell “that assumes very little in the way of prior knowledge of the brain and neurophysiology” (Martin, 2013, xviii).

representations that require discipline-specific knowledge to understand and interpret (Barwich, 2013). Given that the research on smell has traditionally fallen to psychology (Howes, 2009), it seems unsurprising, then, that many researchers in the arts, humanities and social sciences are more often attuned to the affective and social semiotic *effects* of smell, than questions concerning the ecological or material basis of odour sources, or the observable [Image 5] physical properties, behaviours and qualities of those sources, much less the structural and environmental contingencies that afford our “sniffing” (Horowitz, 2016) them.

In the absence of situated and informal inquiries into the ecological or material sources of odours, the story of smell is akin to a novel that takes place entirely within the mind of a protagonist, where external phenomena are reduced to their emotional or symbolic effects or interpretations within a mental “theatre of consciousness” (Gibson, 2015, xxii-xxiii). What is needed, is a call to aromatic *context*, that engages with ‘sense making’ through physical, tangible, multimodal and ecologically contingent ways of knowing that are grounded in inquiry, action and interaction rather than representations or theories *about* phenomena. Such an orientation, to the investigation of source and context as an activity of inquiry, rather than the acquisition or mastery of specialist knowledges, also reflects emancipatory philosophies of education as a form of informal “lifelong learning” (Williams, 1993). As I will argue throughout this dissertation, the instrumentalization and rationalization of smell into domain-specific knowledges and systems of expertise often serves to obscure and impede self-directed ways of knowing, through structures of qualification and credential that paradoxically reproduce the very same kinds of “distinctions” and professional hierarchies (Bourdieu, 1984) that similarly order the senses.

As Henshaw (2013) observes, smell is a “notoriously” difficult research object, which I argue is further complicated by disciplinary antagonisms vying for “context control” (Lyotard,

1984, p. 62). In the arts and humanities, smell is further abstracted through deficit-driven rhetorics of “invisibility” (Tolaas, 2012) that paradoxically frame smell according to what it is *not* (i.e., visible). While these frames are well suited to volatilized odours in commercial and aesthetic contexts, they can also function to obscure more structural questions about the material, physical, sociocultural and ecological “means” (Jameson, 2009) by which these sensory *experiences* (ends) come into “being” (Merleau-Ponty, 2012). As Jameson (2009) observes, the “pseudo-poetic discourse” (Jameson, 2009, p. 151) of phenomenology simply replaces one kind of appeal to authority and disciplinary legitimacy (i.e., science) for another (i.e., Western philosophy).

In the context of modes and media, the visible/invisible binary also reinforces an implicitly “ocularcentric” sensory order (Howes, 2005a) that maintains the visual biases of contemporary information and communication cultures. These orderings of sensory knowledge that often prioritize the abstract over the “concrete” (Jameson, 2009) have a surprising number of benefactors, both institutional and commercial, whose interests combine to keep our understanding of odours and their sources “at bay” (de Castell, 2009). To those of us who seek answers to these questions for the purposes of learning and literacy, these inquiries are hardly a “rationalization” of sensory experience, but a grounded and inclusive philosophy of educating that is as “accountable” (de Castell, 2015) and “emancipatory” (hooks, 1994) as it is “transformative” (van Manen, 1997; Ingold, 2014).

Among the most powerful of these benefactors is the 12.5 billion-dollar commercial flavour and fragrance industry (IFRAN, 2014), which is an extension of a trillion-dollar chemical industrial complex (Bleifuss, 2015), that manufactures the synthetic fragrances that go into “everything from perfume to kitty litter” (Gilbert, 2008, p. 7). From a commercial standpoint, the

idea that “nothing can be smelled without disappearing” (Turin & Sanchez, 2009, p. 3) is a politically strategic “frame” (Lakoff, 2004) well suited to today’s fast moving, super-volatile, synthetic aromachemicals and quite in contrast with the earthy substance, complexity, sensuality and tenacity of plant and oil-based perfumes of the past. For example, these differences are apparent in the discoveries of the not-so-ephemeral 3,400-year-old perfume residues found in the tomb of female pharaoh, Hatshepsut (Brun, 2000) or the still-fragrant cache of a perfumer’s essential oils retrieved from the wreckage of the Titanic after 85 years at the bottom of the ocean (Ribitsky, 2001). However profoundly transformed by time, the tenacity of these materials unmasks another, more magical disappearing act, which is industry’s effort to decontextualize scents from source to obscure questions of provenance and production. As I will argue in my theoretical foundations and methodology sections, the politics of objects, and materials alike, are often revealed in their implicit or explicit “compatibilities” (Winner, 1986) with particular ideological structures and power relations.

As social historians of aroma have observed, commercial fragrance products are marketed primarily through appeals to symbolic or affective sensory qualities “without being necessary to those products’ actual performance” (Classen, Howes & Synnott, 1994, p. 180). Such is the case with the marketing of laundry detergents that rely on a symbolic bait and switch between the hedonic enjoyment of a product’s scent with sensory assessment of “clean” laundry (Pink, 2005). However, our relation to smell as a “nuisance” (Henshaw, 2013) has more recently expanded from “malodours” (Martin, 2013) (i.e., unwanted odours) to include the presence of *any* scent as a potential health hazard.

In recent years, universities, schools and corporate environments across North America have adopted sweeping “scent-free” policies, independent of any strong scientific basis of their

necessity (Senger, 2011). These policies are not only indiscriminate with regards to the sources, nature, or concentration of scents, but also lack nuanced criteria for implementation. For example, the impractical and socioculturally indifferent requirement of fragrance wearers to alter personal, cultural, religious or medical grooming practices *prior* to entering a scent free environment. Thus, if the public has been led to relate with odours at the level of fantasies and fears, it may be due to an emphasis on a conceptual, symbolic and affective, rather than grounded, understanding of what scents *are*. This is not to diminish the need to accommodate individuals with chemical sensitivities or allergic conditions in schools and workplaces but to acknowledge the absence of any critical literacies of smell and scent (McBride & Nolan, 2018) from which to establish the kinds of social contracts or scent ‘aware’ policies that appear to be needed.

A call to aromatic context

As I discuss in detail in both my literature review and theoretical foundations, my rationale for undertaking a site specific study of the selection and uses of different kinds of aroma materials and sources of aroma as multimodal resources in the *contexts* of cultural mediations, embodied interactions and ecological inquiry aims to redress these gaps through a reconsideration of smell as a “situated” (Haraway, 1998; Pink, 2012) “affordance” (Gibson, 2015) of materials, ecologies and environments, rather than a “playback device” (Ingold, 2011a) for introspective affects. In keeping with my disciplinary background and the aims and scope of this study, I use the cultural term ‘aroma’ (and sometimes ‘scent’), rather than the functional term ‘smell,’ to reduce semantic confusion (i.e., ‘smell’ is used interchangeably as both a noun and verb). My use of the term aroma also serves to discursively co-locate source and context, specifying a *culturally*, rather than scientifically, specified class of odours that are valued for their holistic properties, pleasing aesthetic qualities or culinary uses, as opposed to the generic

term ‘smells,’ which can (however erroneously) denote unpleasant odours. I otherwise use the term ‘odours’ to specify volatile compounds more broadly.

In keeping with a focus on the selection and use of aroma sources and materials, my study concerns their tangible and multimodal affordances in the contexts of cultural mediation, “scent-themed” features and embodied interactions. My concern with the structural and ecological *contingencies* of these uses and contexts touches on, but also departs from, explorations of *volatilized* odours within the ambient environment or “smellscape” (Dann & Jacobsen, 2003; Henshaw, 2013; Porteus, 1990; Rodaway, 2006) as a form of olfactory ‘place-making’ (Porteus, 1990; Rodaway, 2006; Tuan, 1975). For example, from my preliminary research of a smellscape mapping workshop in urban Marseille (McLean, 2015) and my own independent improvisations on these practices in rural south of France helped inform my analysis of the role of bodily states and physically embodied practices that are engaged in the activity of smelling (McBride & Nolan, 2018), as distinct from questions concerning their representation or aesthetic translations into visual media.

In contrast with phenomenological, aesthetic or conceptual approaches to smell as a dimension of *consciousness*, my study expands the evidentiary basis of what counts, or is counted as, a legitimate form of knowing, and, more indirectly, of multimodal data, beyond “information centric” (Fernaes, Tholander & Jonsson, 2008), logocentric (Derrida, 1976) and ocularcentric (Howes, 2005a) modes of knowledge production. In this dissertation, I have aimed to invert smell’s apparently *invisible* and *immaterial* status through my research into practical and tangible encounters that involve accessing, interacting with, and using aroma sources and materials for learning and knowing as a form of doing rather than saying (Pink, 2009, 2015). However, this study first asks questions about what we are doing things *with* by attending

directly to an investigation of the observable and tangible properties and qualities of those specific materials and substances.

Drawing on my literature review, preliminary research, and theoretical foundations this dissertation investigates several related questions through a site-specific investigation of my objects and themes as they are situated in a definitively aroma-focused location (Grasse, France). Underlying the study are two initial questions: 1) How are raw, processed (and synthetic) aroma materials *constituted, selected or used* as “multimodal” (Kress, 2012) resources for cultural, social, ecological and scent-themed cultural mediations, interactions and inquiries? 2) What are the tangible, ecological, structural and material *contingencies* that *afford* directly experiential and multimodal encounters with aroma materials and sources? As my study developed, I was able to further refine these questions, which resulted in two site-specific chapters (Chapter Four: Mediating aroma, and Chapter Five: Tangible Inquiries with aroma²), which offer a contrast between *mediated* and *inquiry-based* approaches to the selection and use of aroma sources and materials. These chapters build on my initial questions to ask: 1) What kind of knowing, learning or understanding is *emancipated* when we, figuratively or literally, put down the map (or book)? And, 2) how might we gain a more *grounded* understanding of aroma materials and sources as multimodal resources for tangible, inquiry-based learning, through an examination of their ecological and extra-social (rather than social-semiotic) properties, qualities and uses *in context*?

As I will discuss throughout and in my researcher position statement in the Methodology chapter, when I began this study I was (and still am) a beginner and outsider to the varied scientific, professional and cultural knowledge domains that a study of aroma entails.

² Each chapter is outlined in order below.

Adopting a beginner's standpoint

Throughout this dissertation, I deliberately call attention to my outsider status to, and ignorance of, the considerable background knowledge that often precludes (and quite often prevents) non-specialist inquiry into the highly specialized scientific, scholarly and technical domains that associated with some of the objects of my study. This reflects my theoretical alignments with critical and emancipatory pedagogies (Freire, 2000, 2014, 2015; Kohl, 1994; Ranciere, 1991) of transgressive educational praxis (Giroux, 2010; hooks, 1994) that advocate from the “margins” (hooks, 1994), rather than the centre, of dominant knowledge domains that are largely structured to keep outsiders out (de Castell, 2009). While adopting this standpoint was sometimes challenging, it was also emancipatory (Ranciere, 1991) to embrace my beginner status as an opportunity, rather than a limitation, in the context of engaging with domains that are often non-inclusive, *by design*. Apart from my own self-directed inquiries and literature reviews, I did not obtain any additional qualifications or practitioner status as a means to “authorize” (Bourdieu & Passeron, 1977; Lyotard, 1984) my explorations. Instead, and in keeping with my experiences as a “lifelong learner” (Williams, 1993) coping with cognitive, socioeconomic and gendered barriers, my positionality reflects an engaged yet transgressive orientation to my shifting locations as an *insider/outsider* to the subjects, objects and domains encountered in my research. Where relevant, I bracket off my initial knowledge and beliefs about aroma culture as a relative newcomer against the cultural knowledge I later acquired as a researcher with privileged access to texts, subject matter experts, scholars and practitioners that would not be available to a typical visitor to Grasse. Although I still consider myself an outsider to these fields and knowledge domains, I have continued to develop my *unqualified* practices, through the composition of my own perfumes, tinctures and balms and wild harvesting Ontario spruce sap to

create my own oleoresins and mobilize my research and approaches through DIY-focused, hands-on workshops with students, researchers, industry and the public, which will be discussed in the postscript.

Site specificity: Grasse, the aroma ‘capital’

Perched just over 333 metres above sea-level, the commune of Grasse is one of the most environmentally unique microclimates in the *Provence-Alpes-Côte d'Azur* (PACA) region of the French Riviera. Given its location, it is the ecological affordances of Grasse, such as its moderate climate, biodiversity and, especially, the “scarce” and “precious commodity” (Rosati-Marzetti, 2015, p. 25) of abundant fresh-water springs that were crucial to the establishment of the medieval tanneries and its production of a merchant class in the 18th century (Edelga, 1994). These environmental and ecological affordances contributed ideal conditions for the cultivation, processing and composition of botanicals from the 17th Century, upon which Grasse “founded its reputation on its ability to exploit and transform local natural resources” (Rosati-Marzetti, 2015, p. 25). These resources and ecological affordances required specialized technologies, techniques, processes and practices in order to extract and transform raw botanical materials into high quality aroma essences (Benalloul 2010; Benalloul & Argueyrolles, 2016).

According to Rosati-Marzetti (2015) Grasse has since “acquired an international reputation” as a “World Capital of Perfume” (p. 25) through the coordinated efforts of local stakeholders, including councilors, tourism and fragrance industry professionals and business organizations. These efforts are reflected in the town’s recent application for status as a UNESCO ‘intangible heritage Site’ given its significance to perfumery, aroma culture, agriculture and history (Council of Europe, n.d.). UNESCO (n.d.) defines ‘intangible heritage’ as:

Traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts.

In France, the traditions and practices of intangible heritage are referred to as *savoir-faire*. Grasse defines its *savoir-faire* in several key domains. The first, and earliest of these, is the agricultural *savoir-faire*, involving the unique *terroir* and the cultivation of plants used in perfumery. Next, are the genealogically transmitted practices and production techniques (Benalloul, 2010; Benalloul & Argueyrolles, 2016) such as *enfleurage* and steam distillation, used to transform both locally cultivated, and also imported raw materials into fragrance and flavor essences. And finally, there is the artistic *savoir-faire* of perfumery composition pioneered in the gardens, ateliers and laboratories of Grasse perfumers. Apart from the socio-cultural significance of Grasse's *savoir-faire*, there is a fundamental underlying link upon which all of these contexts depend: raw aroma materials.

From its perfumed gardens, flower farms, aroma-themed museums and perfumery schools, visitors to Grasse have access to an unparalleled range of scent-themed experiences, activities and environments. As pioneering urban smellscape scholar Victoria Henshaw (2013) observes, “scenting features dominate [Grasse’s] urban smellscape experience... and the boundaries of what is appropriate and acceptable are rather different than in most cities” (p. 195). These scented features informed my selection of the *Musée International de la Parfumerie* (MIP) and its nearby gardens, *Les Jardins du Musée International de la Parfumerie* (JMIP) as primary research sites. Given that the name of the museum specifies ‘international’ aroma cultures, the MIP is distinguished “the only museum of its kind in the world” (Grasse Tourism, 2017) by its

volume and diversity of artifacts and unique variety of scent-focused cultural, botanical features and multimodal interactions. As I will show, the MIP is also exceptional in terms of its commitments to equity, diversity and inclusion both within its own organization and through their regional and local community outreach programs that bring social, sensory and creative interactions to socially isolated under-serviced locations and groups.

Despite these *living* examples of sociocultural heritage, Grasse's significance to aroma culture is often framed in the past-tense of romantic and nostalgic "touristic narratives" (Rosati-Marzetti, 2013, 2015) and cultural representations that appeal to culturally essentialist notions of "authenticity" (Cohen, 1988; Henshaw, 2013), such as the depictions of flowing fields of lavender, roses and jasmine in movies, such as Tom Tykwer's (Eichelringer & Tykwer, 2006) film adaptation of Patrick Süskind's (1986) novel *Perfume: The Story of a Murderer*, which are far removed from Grasse's significantly altered sociocultural, ecological, agricultural and industrial present (Henshaw, 2013). However, given contemporary fragrance culture's renunciation of natural perfumery ingredients, along with the *savoir faire* involved in cultivating and processing them, there is still no contemporary parallel for perfumes 'of a place' or regional *terroir*, as with wine (Robinson & Harding, 2015), as there was for aroma materials of the past, which were sought after specifically for their provenance (Aftel, 2002; Patterson & Aftel, 2017). While not the focus of my dissertation, an analysis of the political economy of the senses (Jameson, 1979) is implied in my analysis of scholarly, aesthetic and commercial narratives that conspire to recast traditional raw botanical materials, such as jasmine flower or rose, as symbolic and "ephemeral" (Dugan, 2011) objects, despite their continued cultivation, production and use outside of the massified (Lukács, 1971) contexts of 'Big Fragrance'. As I will later discuss, these narratives are actively recruited in the neoliberal rhetorics of the commercial fragrance industry

and their associates to rationalize the “necessity” of synthetic aroma molecules (Turin, 2007) that, have “freed” modern perfumers from the “constraints of nature” (Ellena, 2012, p. 56).

Accordingly, the development of my study, from an investigation of a missing modality into a deeper examination of questions concerning the nature, provenance, production and properties of these materials and their meaning through context and use.

For example, when I first visited Grasse, I wanted to take one of the many introductory perfumery classes that are available to tourists, not because I was interested in learning how to compose a perfume but because I was curious to know how much a total beginner could learn about these materials in the span of two hours. Given that libraries and archives³ of aroma materials are extremely rare, these workshops provided me with the practical opportunity to simply smell, touch and examine aroma materials, such as oakmoss, tonka bean, orris root, that I had only ever read about but had no awareness of where or how to access them. Outside of the often highly inaccessible fragrance production facilities where materials like these are used, these tourist workshops provide rare opportunities for non-perfumers to smell their way through dozens of uncommon and inaccessible aromas.

Much as these workshops were an early focus of my data-collection, they ultimately served to re-direct me even further away from the aesthetic uses of aroma to ask, instead, questions about their material and ecological sources, and other contexts in which they are used or encountered for other educational purposes. Given the orientation of my work to accessible and inclusive learning environments, I set out to identify the most publically-accessible, rather than commercial or proprietary, sites that were rich and varied in their ‘affordances’ for aroma-

³ Aroma archives, libraries and museums are quite rare outside of Europe. One exception is Mandy Aftel’s newly opened ‘Archive of Curious Scents,’ in her home studio in Berkeley California.
<http://www.aftelier.com/Articles.asp?ID=256>

centric learning and inquiry with an emphasis on uses of aroma outside of the often exclusive, commercially-oriented and often rigidly prescribed contexts of Western fragrance composition.

A ‘source-centric’ investigation of aroma ecologies, materials and interactions

My selection of Grasse’s *Musée International de la Parfumerie* (MIP) and its nearby gardens (JMIP) initially reflects its contextual significance to aroma history and culture, along with Grasse’s ‘Intangible Cultural Heritage’ (ICH). However, and apart from its value to perfume history or museum studies, these contexts are incidental to the aims and scope of my study and my choice of the MIP based on its variety of scent themed interactions, ecological affordances and use of raw aroma materials. This is also distinct from a study of “sensory” or “multisensory” museums (Classen, 2007; Hein, 1998; Levent & Pascual-Leone, 2014), thematic or immersive uses of scent (Keller, 2014; Stevenson, 2014), museum education (Henning, 2007; Hooper-Greenhill, 1992, 2000, 2007) or curatorial strategies (Drobnick, 2005, 2006; Levent & Pascual-Leone, 2014; Schatzki, Knorr-Cetina & von Savigny, 2001) involving the senses. Instead, in keeping with my critiques of disciplinarity as a basis of knowing, I have undertaken an action- and source-centric examination of ecologically situated and embodied encounters and “inquiries” (Eisner, 1991; Ingold, 2013) focused on *the selection and use* of aroma materials (along ecological sources of aroma within the environment) as multimodal resources for *varied* purposes and aims, which include, but are not limited to, their use in the museum environment.

While my research in the MIP was primarily oriented to the explorations of its abundant scent-themed (Henshaw, 2013) features and environments, the MIP also proved an exceptional site to examine the more practical considerations involved in selecting and using aroma materials as a multimodal resource (Howes, 2006, 2009; Iyer & Luke, 2010; Jewett, 2008, 2009; Jewett & Kress, 2003; Kress, 2010) for inquiry, communication and meaning-making. My study in the

MIP and JMIP often drew upon and included my own participation in the museum tours, my experiences and documentation ‘shadowing’ the mediators in their work in the museum and the community. These experiences both extended, and also complimented and contrasted, my own auto-ethnographic interactions and solo-explorations of the museum’s gardens, olfactory media, such as the smell machines, in dynamic and critically instructive ways.

Situating aroma: paradigms and perspectives

As I outline in my theoretical foundations and methods chapters, recent claims that digitally mediated culture requires new forms of literacy, learning and communication informs a so-called ‘multimodal turn’ (Jewitt, 2009) across fields of education, technology, interaction design and communications. However, as a primarily social-semiotic interpretive strategy, multimodal analysis appears to neglect extra-social or ecological phenomena that might otherwise expand the concept of modal affordances to include biological, physiological and environmental forms of ‘information.’ I argue that this is especially crucial for living and biological sources of sensory stimuli, such as plants that “communicate” (Wohlleben, 2016) through chemical terpenes, electrical impulses and other forms of “information” that we have only begun to acknowledge as such or redefine in non-human terms (Wohlleben, 2016; Baluška & Ninkovic, 2010). As we now know, plants produce, receive and communicate with other species through chemical signals involving “alkaloids, terpenoids, saponins, flavonoids, and tannins” (Baluška & Ninkovic, 2010, p. 181) that are often directly perceivable, and sometimes physically observable, to humans in the forms of odours and substances such as sap, resin and pollen. This is not to say that these phenomena are somehow outside of culture, but that the social semiotic constitutions of the modal affordance involve genealogical and “hylomorphic” (Ingold, 2011a; Simonden, 1992) ordering of mind over matter, that neglect more grounded and

situated encounters with phenomena that can be understood “from within” (Barad, 2007) the living world rather than purely through its inscriptions. As I will argue, it is not enough to simply *include* missing modalities such as smell without simultaneously critiquing the anthropocentric and genealogical knowledge paradigms that underwrite them. In the social sciences and humanities, the ecological and environmental contingencies that afford our corporeally embodied or sensory experiences often go ‘missing in action,’ eclipsed by traditionally logocentric representational knowledges and ocularcentric sense perceptual paradigms.

As I discuss in my literature review, while there is an ever-growing body of work devoted to scientific, psychological, linguistic and cultural dimensions of smell there is very little study, by comparison, of the extra-social and ecological *sources* of the volatile compounds we refer to as smells. In the context of aroma as cultural object, scholarship that draws on a Western sensory order often implicitly privileges a Euro-centric conceptualization of scent that is synonymous (and almost interchangeable) with perfumery, which maintains aroma as the property of fragrance culture. From an structural historical analysis, smell has not gone missing so much as it has been systematically suppressed (Classen, Howes & Synnott, 1994; Drobnick, 2006), marginalized by the same racialized, gendered, classist and ableist categories (Classen, 1992; Classen, 2005b; Drobnick, 2006; Hashim, 2012; Henshaw 2013; Miller, 1998; Rhys-Taylor, 2010, 2013; Sennett, 1994) and structural forces that have similarly suppressed individuals and groups deemed “threatening to the social order” (Classen, Howes & Synnott, 1994, p. 3). Within contemporary communications, media and education, the low status of smell is rendered even more invisible by an increasingly screen-based information culture in its maintenance of an ocularcentric, and logocentric, sensory order. Finally, the neglect of odours, as a form of information, raises questions about what counts or is counted as information or document

(Gitelman, 2006), and what is entered into the record of a given knowledge domain along with the role of those domains that authorize the distanced representation of phenomena over more directly experiential or situated ways of knowing.

An ecological and extra-social orientation

As my research progressed, I became increasingly oriented to the ecological and “extra-social” (Baldwin, 1899; Ingold, 1986) contingencies that afford the activity of smelling. Drawing on James J. Gibson’s “ecological approach” to perception (Gibson, 2015) and his “affordances”, this study sought to invert traditional mind over matter hegemonies of sensory perception that are constituted independent of external forces. My focus on the tangible and substantial properties and affordances of aroma sources and materials (both living and processed) is also a departure from the predominantly phenomenological orientations to sensory studies in the social sciences and humanities, which engage sensory phenomena as a project of subjectivity and consciousness. This is not to negate the value of these approaches but to question the over-determination of the auto-ethnographic and the subjective at the expense of the structural or ecological contingencies of these lived experiences (van Manen, 1997). However, ‘inter-subjectively’ distributed among diverse participants, an orientation towards the subjective and interior dimensions of sensory experiences is quite distinct from critical inquiries into the ecological, structural and environmental forces that make such valued sensorial encounters with these phenomena possible.

Findings from the research undertaken for this dissertation offer a contrast between structured, scaffolded and socioculturally-oriented *mediations* of aroma against more open-ended and self-directed approaches to doing, knowing and understanding as a form of *inquiry*, both of which serve to call attention to the structural, ecological and environmental contingencies that afford these encounters and activities. My findings reflect what I came to know about aroma

most directly from its constitution within the built and ecological environments that afforded their perception. This is in contrast with a critique of structures and practices that reinforce acquired and representational knowledge, by design. Throughout my analysis, I discuss the consequences of deferring to secondary sources that speak *on behalf of* other phenomena, inscribing anthropocentric relations onto those phenomena that are already communicating and interacting through modes we have only barely begun to understand.

Chapter summaries

The following summaries provide a short overview of the nature and focus of each chapter. As a research informed dissertation, findings from my study are presented in two site-specific chapters that feature thematic narrative multimodal vignettes pertaining to the selection, uses and affordances of aroma sources and materials as a multimodal resource in the MIP and JMIP. These chapters are supported with a critical literature review, theoretical foundations and methodologies that inform my questions and rationale for the practical, and directly experiential, approaches I have undertaken to exploring, identifying, interacting with and engaging with affordances of living plants, material tools and objects, environmental ambiances.

Chapter one: literature review

The first chapter offers a critical and thematic, rather than comprehensive, review of key perspectives, paradigms and topics relevant to the aims and scope of this study, including both foundational and emergent perspectives on smell, aroma culture and olfactory knowledge. In keeping with the focus and constraints of the current study, this review is intended to identify key narratives, frames, tropes, claims and apparent gaps that are relevant to my research questions, theoretical foundations, methodological choices and focus throughout.

Chapter two: Theoretical perspectives

This chapter is a critical review of the ontological, epistemological and ideological foundations that inform key perspectives featured in my study and where I extend or depart from them. I outline the underlying assumptions, disciplinary commitments, debates and foundational concepts that are associated with these perspectives and how they are reflected in my own theoretical framework and position. My summary and analysis of these perspectives is focused around their relevance or significance to the critical, pedagogical and ecological development of my research questions, my methodological choices and study design along with a rationale for my chosen interventions.

Chapter three: Methodology

Building on initial theoretical foundations discussed in the preceding chapter, this chapter outlines the methodologies and interpretive strategies that inform my study of the selection and use of living and processed raw aroma materials and sources, with a focus on the physical and observable properties of those materials and sources, through action-centric, auto-ethnographic and multimodal methods that attend to knowing as “doing” beyond texts (Jenson & de Castell, 2012). I discuss the rationale for recruiting ‘key observers’ as an inter-subjective counterpoint from which to contrast my sensory-ethnographic and auto-ethnographic accounts of the sensory and multimodal affordances of phenomena, such as scent, that cannot be recorded in the same way as other forms of information. I discuss how shifts from the initial conceptualization of this study influenced the rationale for my selection of methods, but also highlight their limitations, and I conclude with a discussion the refinements that necessitated the improvisation of my own methodology, which I call *tangible inquiry*.

Chapter four: Mediating aroma

Chapter four examines the selection and use of aroma materials as multimodal resources for situating and mediating aroma culture as a ‘living heritage’ within the built and ecological environments of the MIP. My findings are presented in three parts featuring thematic multimodal narrative vignettes. *Part one* backgrounds the MIPs orientations to the philosophy of *médiation culturelle* (cultural mediation) leading into an examination of intersubjective activities and interactions that involve aroma as a multimodal resource for mediation with a focus on the selection and use of the materials. *Part two* examines the selection and use of aroma in scent-themed interactions focused on the differences between synthetic and natural aroma materials. *Part three* concludes the chapter with a single extended vignette in which I shadowed a senior guide in the preparation and undertaking of a memory workshop with seniors at a local nursing home in Grasse, with an analysis of the materials and how they were used. Chapter four asks: 1) How do the MIP guides mediate acquired knowledge of aroma culture with persons or groups who may not have any *intrinsic* interest or *prior knowledge* of perfume or its history? 2) What are the *selection criteria* for aroma materials in the context of cultural mediation? 3) How can ecologically situated and inter-sensorially grounded practices with aroma materials contribute to new forms of multimodal literacies? Throughout this chapter, there are several volatile citations, which I call ‘smell prompts,’ which are intended to encourage direct experience of the scents discussed in the dissertation [see ‘Preface: How to use this dissertation’].

Chapter five: Tangible inquiries with aroma

Chapter five is a site-specific study undertaken in the MIP’s 2.7 hectare botanical gardens, *Les Jardins du Musée International de la Parfumerie* (JMIP), in Mouans Sartoux. The *tangible inquiries* in this chapter offer a contrast between the more explicitly scaffolded and structured

mediations featured in chapter four through unstructured approaches to understanding, and interacting with living, ecologically situated aroma sources as a form of self-directed and tangible inquiry. Extending the format of chapter four, these site-specific inquiries are given in the form of narrative vignettes interspersed with ‘Aroma Inquiry Prompts’ to focus on ecological affordances of aroma sources and materials in the MIP and JMIP. Drawing on themes that are developed in the previous chapter, I examine how mediated, or predefined, routes or pathways obscure the possibility of exploration or self-directed learning, as well as what kind of knowing, learning or understanding is made possible when you put down the map (or book)? Finally, I ask how tangible, inquiry-based learning contributes to a more ecologically-grounded understanding of aroma materials in context (McBride & Nolan, 2017) through an emphasis on the extra-social, rather than socioculturally *acquired* (or social semiotic), properties of these phenomena. This chapter features my own developing method of ‘tangible inquiry’ as a practical and directly experiential approach to exploring, identifying, interacting and engaging with affordances of living plants, material tools and objects, environmental ambiances. These inquiries work together to articulate an ecologically situated, inquiry-based model for exploring the tangible properties and sources of aromas and aroma materials.

Chapter six: Conclusion

I conclude the dissertation with a critical and reflexive analysis of the opportunities and challenges that unfolded during my research in Grasse and that complicated but also refined my study. I discuss why the theme of perfume was increasingly peripheral, if not counterproductive, to my own critical and theoretical goals and aims and how a study involving the politics of perfume and commercial fragrance production would require a very different study than the one I designed. From a theoretical standpoint, I discuss how my findings contribute to de-linking smell,

aroma and sense-making from knowledge domains that have attempted to claim them as the property of disciplines and experts. As a highly situated qualitative research study, my findings are not intended as generalizable claims, so much as the basis for an ecologically and socioculturally situated, theoretically grounded and action-oriented approach to paradigms and perspectives that have decontextualized smell from source and context. Finally, this dissertation issues a call to sensory context that engages with aroma through an active, embodied, situated and multimodal inquiry of ecological, sociocultural and structural contingencies that both complements, as well as extends, our scientific and socio-cultural understandings of smell and the senses.

Volatile and tangible citations: ‘Aroma Inquiry’ and ‘Smell Prompts’

Throughout the dissertation and as described in the Preface, are a series of multimodal ‘aroma inquiry’ and ‘smell prompts’ that mirror the differing practices of engaging with aroma contrasted in my chapters. These prompts offer both ‘volatile citations’ and hands-on activities that involve directly observing, and physically interacting with, the ecological contingencies that afford our perception of the multimodal properties, qualities and behaviours of aroma materials featured in the vignettes. These prompts provide an opportunity to contrast, and also calibrate, (Robinson, 2000) your own sensory analysis with those of myself and the participants in my study, thus supplying a more experiential grasp of my examples, which also invokes feminist rethinkings of traditionally regressive, positivistic or textbound notions of “validity” (Lather, 1995). Methodologically, these prompts offer a sensory and multimodal take on “inter-rater reliability” (Neumann, 2009) that function not unlike conventional in-text citations in that they reference a source that the reader can consult independently. These citations also contribute an inter-subjective intervention of auto-ethnographic (Visweswaran, 1995) and sensory

ethnographic (Pink, 2009, 2015) accounts of sensory experiences, such as smelling, that cannot be recorded. Unlike the ‘smell prompts,’ which are intended just for smelling, the ‘aroma inquiry’ attend to the observable, tangible properties and qualities of the *materials* (rather than their sensory *effects*). For example, to consider how the state (i.e., liquid, solid or aerosolized), of an aroma material is contingent on environmental conditions (such as light, heat, movement, etc.) that *afford* the perception of different attributes or properties. As I have explained in the preface, these prompts are not units of analysis but a form of ancillary multimodal media in support what is otherwise described in words.

Postscript: The creation of the Aroma Inquiry Lab

The postscript offers a discussion of the critical implications of my research, my efforts at knowledge mobilization and the role of this research in the conceptualization and development the Aroma Lab, which has extended the research capabilities of Ryerson University’s Responsive Ecologies Lab to include explorations and interactions involving taste and smell. In the absence of any grounded or materials and source centric environments for aroma *learning inquiry* (i.e., pedagogical, as opposed to commercial, scientific or arts based) in the Canadian context, I suggest that the research presented in this dissertation contributes a theoretically grounded and highly practical foundation for the development of critical, accessible, inclusive and ‘Do-It-Yourself’ (DIY) approaches to exploring, learning and making with aroma as “experiments in knowing” (Oakley, 2000).

Chapter One: Literature review

As I noted in the introduction, smell is a “notoriously” difficult (Henshaw, 2013) research topic that is made more challenging by disciplinary antagonisms between the sciences and social sciences (Lyotard, 1984) along with differences in field-specific representations of knowledge (Barwich, 2013). While cultural historians of the senses call attention to the dominance of psychological paradigms of smell (Classen, Howes & Synnott, 1994; Howes, 2005a; Howes & Classen, 2013) that privilege the perceptual over the social or cultural, they also observe that other fields, such as history and philosophy, have “excluded odour from their accounts and concentrated on the visual and the auditory, without being accused of any sensory biases” (Classen, Howes & Synnott, p. 9). Considering the importance of aroma in the ancient world, these disciplinary antagonisms and omissions are paradoxical, given, as natural perfumer Mandy Aftel (2002) notes “distinctions between religion, medicine, science, art, and psychology were not nearly so absolute in their time as they are now” (p. 26).

Today, in the fields of communications, media, and education, smell is rendered invisible by the visual biases of screen-based information culture that maintain an already “ocularcentric” sensory “order” (Howes, 2005a), which is largely founded on logocentric, or “textbound,” epistemologies (Derrida, 1976). As I will discuss in Chapter two, such ‘mind over matter’ sensory orders and epistemologies are further reinforced by recent neurocentric claims that promote a kind of post-functional view of sensory perception as “cross modal” (Spence, 2017) “tricks” of the brain (Spence & Youssef, 2016), independent of functional and ecological factors. If as futurist Hans Moravec (1997) proclaimed, “the senses have no future.” it may be due to our ‘mind over matter’ orientation of the senses and sensory phenomena. This problem is especially consequential to our understanding of smell in the absence of a common curriculum or “critical”

literacies (McBride & Nolan, 2018) of smell, the molecular, and also material basis of odour sources or the applied knowledge of their transformation from raw materials into flavours, fragrances or apothecary that contribute to our lived experience. From a critical standpoint, this involves an exploration of the dominant paradigms, narratives, frames and tropes that tell different kinds of stories about smell and the senses in order to identify whose interests they reinforce or negate.

To this end, this review takes a critical and thematic, rather than comprehensive, approach to perspectives, paradigms and debates associated with smell and the senses to situate the aims and scope of my study. Using interpretive strategies identified in my methods chapter, such as Critical Discourse Analysis (CDA) (Fairclough, 2001; Gee, 2013; Van Dijk, 1993), I will identify and analyze key narratives, frames and apparent gaps that are relevant to my research questions and focus. I will conclude with a reframing of these perspectives, paradigms and debates relative to my theoretical foundations and methodological orientations and outline their role in developing the questions that shaped my study. Given the specialist nature of these paradigms and perspectives, I will, where useful, provide non-specialist definitions for technical terminology or concepts.

Social, cultural and historical perspectives on smell

According to sensory anthropologist Howes (2009), “the study of perception has traditionally fallen to psychologists, who have tended to pursue it on a one-sense-at-time basis” (p. 255). Howes faults functional psychological accounts for a “modular” view of the senses in which “each sense has its proper sphere (e.g., sight with colour, hearing with sound, and taste with flavour)” (p. 225). Yet Howes also critiques the subjectivity of phenomenological orientations, which “may speak to many people who have had similar experiences. However, it

cannot speak for all peoples everywhere” (Howes & Classen, 2014, p. 10). Despite their apparent contrast, and as I will show, the phenomenological perspective is actually quite compatible with that of Howes’ in terms of their mutual disavowal of functional sensing.

In his introduction to *The Smell Culture Reader* (2006) Canadian curator Jim Drobnick argues that there is an “urgent need” to examine the social and cultural contexts of smell before we can assess its instrumental, institutional and technological elaborations. This was especially the case in 2006 when much of the literature on smell was still dominated by psychology and the physical sciences. Accordingly, the *Smell Culture Reader* contributed missing and marginalized perspectives, including those of artist-practitioners, perfumers, aromatherapists, anthropologists, sociologists and historians. Drobnick’s cultural focus extends almost a decade of prior work by David Howes and his colleague Constance Classen, in their founding of the ‘anthropology of the senses’ (Classen, 1997), which sought to account for neglected perspectives such as the sensory philosophies of Condillac, (1930) or chemist-perfumer Piesse (1897) who were relatively unknown to the general public prior to the arrival of the internet. Throughout their work, Howes and Classen emphasize how “smell is not simply a biological and psychological phenomenon... [but a] cultural, hence a social and historical phenomenon” (p. 3). In their definitive book on the subject, *Aroma: The Cultural History of Smell*, Classen, Howes and their colleague, sociologist Anthony Synnott (1994), establish the crucial *structural* argument that the “devaluation of smell in the contemporary West is directly linked to the reevaluation of the senses” (p. 3) by 18th and 19th century philosophers and scientists who decided that “sight was the pre-eminent sense of reason and civilization” (Classen, Howes & Synnott, 1994, p. 4).

To put a finer point on this, Classen, Howes and Synnott argue that the knowledge of smell was not so much unknown, as it was *deliberately* and *systematically* “suppressed” by the

same structures and forces that operated to similarly disempower non-dominant sociocultural groups, such as minorities, women, persons with disabilities, and the poor, deemed “threatening to the social order” (Classen, Howes and Synnott, 1994, p. 4). While not the focus of my own study, these crucial sociocultural (Vannini, Waskul & Gotschalk, 2012) dimensions of smell are nonetheless consequential to a *critical* consideration of smell, given the well-established role of odour and the senses in assigning and maintaining gendered, racialized, and classist social categories of “disgust” and “desire” (Classen, 1992; Classen, 2005b; Drobnick, 2006; Hashim, 2012; Henshaw 2013; hooks, 1992; Sennett, 1994; Miller, 1998; Orwell, 2001; Rhys-Taylor, 2010, 2013). For example, in her research of “urban smellscape,” Henshaw (2013) observes how smells associated with sociocultural diversity, such as “international food odours” are often said to be “out of place” (p. 97) in xenophobic disputes over heritage. Echoing Howes and others, Henshaw contends, “we have to look back in history to gain an understanding of why smell is held in such low regard” (Henshaw, 2013, p. 9).

Among the most foundational works in the sociocultural theorizing of smell is Alain Corbin’s redolent history of odour in 18th and 19th Century France, *The Foul and the Fragrant: odor and the French social imagination* (1986). Apart from its atmospheric detail, Corbin’s history offers an incisive summary of structural and ideological forces, particularly in the sciences, that contributed to the deliberate suppression of smell from post-Enlightenment, Western knowledge culture:

Historians neglected the documents of the senses. The sense of smell was discredited. According to Buffon, it was the sense of animality. Kant excluded it from aesthetics. Physiologists later regarded it as a simple residue of evolution. Freud assigned it to anality. (Corbin, 1986, p. 229)

According to (Drobnick, 2006) some of Corbin’s atmospheric and historical detail influenced German author Patrick Süskind’s best-selling 1985 novel, *Perfume: The story of a Murder*, (later adapted into a feature motion picture), which is, for my purposes, rich in its evocative depictions of imagined odours and smellscapes of 17th century Grasse. While Süskind’s novel is a very much a *psychological* thriller focused on themes of obsession, desire, and violence, it is also exceptional for its detailed and visceral description of odours. As Drobnick (2006) notes, “although the main character is a psychopath who reiterates the stereotype of the degenerate olfactophilic, the evocativeness of the novel’s world—completely suffused with and oriented around odors—stirred literary and critical analyses within and beyond its own context” (p. 4), which contributes also to a cultural reconsideration of smell as a missing modality for communicating and knowing the world.

While these social and cultural perspectives contribute to expanding our understanding of smell beyond scientific accounts, the institutional knowledge of smell is still conventionally associated with the field of psychology. I will now turn to a selection of psychological perspectives with an emphasis on popular tropes and narratives that maintain smell within a perceptual paradigm.

Psychological perspectives on smell: Sniffing facts from fictions

This section offers a comparative example of foundational and popular perspectives associated with the psychology of smell, rather than an enumeration of already well established findings and claims (e.g., Buck & Axel, 1991; Doty, 2001; Doty, Applebaum, Zusho & Settle, 1985; Doty & Cameron, 2009; Doty & Kamath, 2014; Doty, Shaman, Appelbaum, Giberson, Siksorski & Rosenberg, 1984; Engen, 1960; Engen, 1982; Keller, Zhuang, Chi, Vosshall, & Matsunami, 2007; Martin, 2013; Wyatt, 2014).

In the realm of *human* cognition and sensory perception, the study of smell involves a number of psychophysiological, evolutionary and chemical processes that include, but are not limited to: physiology, biology, anatomy, cognition, behaviour, neuroscience, evolutionary biology and organic chemistry (Martin, 2013). In his comprehensive, yet highly accessible, *Neuropsychology of Smell and Taste* (2013), olfaction researcher Neil Martin explains that the chemosenses are “the most neglected and unusual in the sensory panoply” (p. 1) even though “smell is the first chemosensory custodian of survival” (p. 3) and one of “the oldest senses, if not the oldest” (p. 4) of our sensory structures. Given that smell is often framed as a ‘vestigial’ remainder from our “ancestors who got around on all fours noses to the ground” (Agapkis & Tolaas, 2012, p. 569), it is not only the “most marginalized of the widely recognized five senses, but also the one people are most willing to lose” (Henshaw, 2013, p. 9).

Among the most commonly cited psychological narratives of smell is its celebrated association with memory and emotion (Ackerman, 1990; Engen, 1991; Herz, 2006). However, enduring, such beliefs go unquestioned in the absence of any common knowledge of the scientific facts of chemosensory function. For example, there is the enduring (yet debunked) belief in the myth that *pheromones* contribute to human attraction (Ackerman, 1990; Goode, 2016), despite the fact that humans lack the vomeronasal organ (VNO) required to detect them (Horowitz, 2016; Martin, 2013; Wyatt, 2014). Without factual and up-to-date scientific knowledge, it is difficult for non-scientists to separate olfactory facts from fragrant fictions. However, it is also clear how the fragrance industry has profited from our ignorance through their appeals to emotions and aesthetics, rather than the disclosure of ingredients they lobby to conceal (Bleifuss, 2015; Saponara & Whelan, 2015). According to sensory science scientist Avery Gilbert (2008), “the notion that smell is purely an emotional sense is an old one” (p. 190)

thanks, in part, to one of the most established olfactory narratives, which he dubs the “Proustian problem.” Gilbert deconstructs the Proust trope with a keen eye for (missing) details: “Proust’s struggle with the soggy madeleine is distinctly not the way most people experience odor-evoked memory. For most of us, these recollections spring to mind easily... not a prolonged, constipated mental effort” (Gilbert, 2008, p. 210).

Gilbert challenges the popular fetish of smell as a kind of Proustian time machine that can retrieve long lost memories at the whiff of a cookie, which reinforces the agentic notion of the senses as *playback devices* (Ingold, 2011a) for the purposes of selective, usually pleasant, recollections. Actually, olfactory-triggered memories are often unwanted, involuntary, and “subject to fading, distortion, and misinterpretation” (Gilbert, 2008, p. 353). For example, in their study, Olfactory triggered panic attacks among Khmer refugees, Hinton, Pich, Chhean and Pollack (2004) examine the nature of odour “triggered” memories through their study post-traumatic stress (PTSD) flashbacks among Vietnamese survivors of the atrocities of the Khmer Rouge. Unlike the Proustian example, whereby individuals have an agentic and selective ability to recall and reflect on a smell memory on cue, the subjects of this study had violent and involuntary responses to everyday smells, such as cigarette smoke or car exhaust, which they associated with traumatic experiences of war. These findings challenge the romantic framings of odour-evoked memories as an intentional and agentic process, along with the notion that behaviourist assumption that exposure to certain smells can bring about universal affective responses independent of idiosyncratically and socioculturally lived and physical differences among individuals (Cain, 1982; Doty & Cameron, 2009; Doty & Kamath, 2014; Hashim, 2012; Ferdenzi, Roberts, Schirmer, Delplanque, Cekic, Porcherot, & Grandjean, 2013; La Buissonniere-Ariza, Lepore, Kojok, & Frasnelli, 2013).

From this functional psychological standpoint, smell involves much more than ‘feelings’ but also the ability to detect, discriminate and identify odours, the cognitive and physiological ‘mechanisms’ of smelling and individual factors, such as age, sex, genetics, culture and socialization, that are said to influence perception (Doty, 1985; Doty & Camerson, 2009; Doty & Kamath, 2014; Majid, 2015; Martin, 2013; Orhan et al., 2012). There is also the issue of habituation and adaptation (Martin, 2013) that results in a kind of olfactory unconscious that neutralizes familiar smells (our bodies or homes, for example) while amplifying the unfamiliar as a “potential threat or source of pleasure” (Henshaw, 2013, p. 199).

These perspectives, which I discuss in the next chapter, offer insights into the empirical and functional basis of *how smell works*, from which to assess some of the commonly held beliefs about smell and the senses that I encountered in my study and that inform many of the paradigms and philosophies featured in my theoretical foundations. I now turn to a summary of perspectives concerning smell and learning, which primarily draw on these same psychological foundations.

Perspectives on olfactory learning, language and expertise

By and large, much of the research pertaining to olfactory learning, ability and expertise is undertaken by researchers in psychology, psycholinguistics and contemporary neuroscience (Ballester, et al., 2008; Cain, 1981; Croijmans & Majid, 2016; Engen, 1991; Majid, Speed, Croijmans & Arshamian; 2017; Parr, 2002; Royet, Plailly, Saive, Veyrac & Delon-Martin, 2013; Tempere, Cuzange, Malak, Bougeant, Revel & Sicard, 2011). These studies focus largely on factors of ability, performance, language use and systems of classification. This section outlines some of these perspectives, beginning with a brief comment on the place of the senses in behaviourist and cognitive traditions of education.

As noted in McBride and Nolan (2018), within foundational models of early years' education, sensory learning is primarily defined according to its cognitive and developmental role. As a consequence of the still dominant "ages and stages" (Nolan & McBride, 2015) model of developmental psychology, social knowledge, in the form of language, begins to abstract and distance children from embodied explorations of, and experimentations with, phenomena (Kamii, 1991; Nolan & McBride, 2015). As a result, culturally acquired knowledge (Ingold, 2011a) increasingly replaces the child's autonomous self-directed inquiry of their world. As anthropologist David Howes (2009) notes, psychology's "modular conception of the sensorium is enshrined in the plethora of current picture books on the 'five senses' which teach children how to individuate and use their sensory faculties" (p. 225) in accordance with the dominant sensory order that inscribes those categories. When it comes to the chemical senses of smell and taste the structural influence of these modular and culturally inscribed sensory orders is evident in the preeminence of logocentric schemes of knowing (Derrida, 1976) whereby smells are classified according to acquired and domain specific categories, independent of the physical properties or qualities that constitute their percepts.

Dubbed the "tip of the nose" problem (Gilbert, 2008; Henshaw, 2013), the inability to name odours is often characterized as a dilemma that is unique to smell. This has led to the development of many specialized aroma taxonomies and systems of classification. While Linnaeus (1764) is widely credited with inventing the first scientific classification of smells, Gilbert (2008) points out that "he did not intend to create a *universal* classification of all smells. In fact, he had little interest in smells as smells" (p. 41, emphasis added), his interest was the identification of plant volatiles. In the context of commercial fragrance, Gilbert (2008) explains that one of the "tricks" of perfumery training is to locate "a personal impression of each

ingredient. These individualized mental hooks are the key to remembering the fine discriminations needed to do perfumery” (p. 29) such as the comparative method⁴ of French perfumer Jean Carles (2006). These approaches reflect the role of a perfumer’s uniquely lived experience in assigning often highly subjective points of reference to given aromas *in addition to* learning received descriptors, taxonomies or fragrance families. As I have previously argued, in (Nolan & McBride, 2015), acquiring the *word* for ‘strawberry’ is quite different than understanding the properties of a *given* strawberry that are understood through the physical and sensory knowledges of taste, touch, texture or sight and one’s own relationship or response to these qualities.

Among the best known modern examples of an applied aroma classification system is the wine aroma ‘wheel’ (1984) developed by sensory chemist Ann Noble, which has 12 categories and 94 descriptive terms, ranging from “berry” to “wet dog” (Gilbert, 2008, p. 24). Such systems have become foundational resources for the sensory evaluation and tasting component of wine education programs such as the Wine Education Spirit Trust (WSET, 2017), which has its own Systematic Approach to Tasting (SAT). Gilbert (2008) argues that the “appeal of aroma wheels is that they organize product-specific smells into a few, easily recognized categories” (p. 26) without the need of any scientific knowledge of the chemical compounds that are responsible for those aromas.

However, one primary criticism of these systems is that they largely rely on Western examples that are highly contextual, rather than universal (Croijmans & Majid, 2016), which may be why specialized practices of naming odours (i.e., memorizing descriptors) are not transferrable across semiotic domains or cultures. For example, in their research of odor naming

⁴ Proprietary methods such as those of Jean Carles draw on practices that were quite commonplace among his contemporaries that reflect centuries of *savoir faire* rather than the novel invention of one individual.

among wine and coffee experts, Croijmans and Majid (2015) found that whereas experts have more opportunities than non-experts to acquire specialized vocabulary, they were also no better than untrained individuals in their ability to identify and name smells. In contrast with cultural groups who learn the language of odours early in childhood (Majid & Burenhult, 2014), Western olfactory experts acquire specialist descriptors “late in life and long after any critical period for language learning” (Croijmans & Majid, 2015, p. 487). They hypothesize that “expertise alone is not sufficient to overcome the limits of language in the domain of smell” (p. 483). Similarly, Parr's (2002) study of wine experts found that specialized aroma taxonomies (WSET, 2017) appear to “interfere” with performance at aroma naming (p. 27) in some cases, concluding that overall perceptual skill is more critical in the development of chemosensory expertise.

As neuropsychologists Royet, Plailly, Saive, Veyrac and Delon-Martin (2013) note, experts are required to “verbalize” observations. While the authors suggest this reflects greater discriminatory abilities than those who do not undertake “regular” or “systematized” practices (p. 3), it may also reflect, as Jenson and de Castell (2012) observe, the “ease with which we mistake linguistic fluency with cognitive competence” (p. 15). In reality, as Gilbert (2008) argues, people who “sniff for a living” and create scents for “everything from perfume to kitty litter” (p. 8) need practices that also involve physically *tolerating* a variety of smells, from many different kinds of sources. According to Sissel Tolaas (2012), with training, anyone “can learn to tolerate and even enjoy many ‘bad’ smells in different situations and environments” (p. 570). For the perfumer, these practices include getting to know the aroma materials, rather than dwelling on the mastery of semantic systems. As natural perfumer Mandy Aftel notes, “there is no better way to understand a given aroma than to smell many different versions of it” (2014, p. 58).

These psychological and linguistic perspectives on odour naming and smell perception highlight some of the underlying assumptions and differences between cognitivist and ecological (Gibson, 2015) approaches to perception. As Ingold (2011a) argues, “cognitive processing of sensory data is equivalent to sorting by the categories of a received classification. In every sense, it begins with an object in the world and ends with its representation in the mind” (p. 159), which he associates with the appropriation and instrumentalization of natural phenomena into material culture (Ingold, 1986; 1992). As I will discuss in my theoretical foundations section, this overdetermination of the cognitive and semantic neglects the role of external ecological, embodied, structural and material contingencies that reconfigure our understanding of sensory perception as a reciprocal process between a perceiver and her environment (Hirose, 2002).

From this more ecological standpoint, Royet et al.’s (2013) observation, that perfumers “live in enriched olfactory environments in which they learn to characterize and recognize numerous stimuli daily and learn to discriminate minute differences between odors” (p. 7), suggests an acknowledgment that olfactory development is also contingent on olfactory rich environments and resources. However, the reduction of ecologies and environments into their effects as sensory stimuli reflects is yet another instrumental appropriation of nature such as Ingold describes. Structurally, this also mirrors the objectification of persons, sensory neurodiversities and social cultures into anthropocentric, socioculturally essentialist and psychologically regressive classifications and categories. From a more ecological analysis, these perspectives contribute little to our understanding of what is constituted or counts as an “enriched olfactory environment” (Royet et al., 2013, p. 7), or olfactory learning resource, in the absence of grounded, contextual and situated inquiries into the nature of those ecologies and materials.

Smellscapes, museums and the built environment

As I discussed in the introduction, my selection of the *Musée International de la Parfumerie* (MIP) and its nearby gardens (JMIP) reflects its variety of scent themed interactions, ecological affordances and uses of raw aroma materials. This next section examines perspectives on smell and the senses in the context of experiencing and situating “place” and “space” (Kirsh, 1996; Lefebvre, 1991; Tuan, 1975), with a discussion of “smellscapes” (Henshaw, 2013), considerations of the body in the built and designed environments and scent in the context of “multisensory museum” (Levent & Pascual-Leone, 2014).

In the realm of designed and built environments, UK urban designer Victoria Henshaw’s (2013) pioneering research “urban smellscapes,” an elaboration of Rodaway’s (2002) “smellscapes,” invites the public to engage in the deliberate activity of considering and smelling outdoor environments—from alleyway garbage bins and exhaust vents, to historic structures—giving citizens a role in producing their own ideas of urban space and place. While Henshaw’s work draws on theoretical perspectives of the role of human agents in the “production of space” (Lefebvre, 1991), it moves beyond theoretical abstractions to speak to the practical and real world concerns of urban planners. Extending earlier more sociological projects of place-making, such as acoustic ecologies and “soundscapes” (Truax, 1996), Henshaw’s theorization of urban smellscapes is experienced most directly through the situated practice of “smellwalking” (Henshaw, 2013). Key to smellwalking is role of the body, in negotiating the built and ecological environments in which we encounter smells and of smellscapes as an “experiential” and “embodied” experience of place (Porteus, 1990; Rodaway, 2006; Tuan, 1975).

Henshaw’s practices of smellwalking are extended in her colleague Kate McLean’s urban “smell maps” (McLean, 2012, 2017, 2018), which make use of graphic design and traditional

artistic media such as watercolours to visualize “the invisible, the transient” (McLean, 2017, p. 513) subjective experience of smell as both apprehensible and communicable. Unlike the linguistic taxonomies used in mastery-oriented domains, such as wine and perfume, McLean’s sensory maps communicate a poetic, rather than rational, representation of smell walking. McLean’s work also extends Henshaw’s attention to the embodied dimensions of smelling that involve active considerations of physical proximity, duration and intensity of odours. In my own participation in one of McLean’s smell mapping workshops in Marseille (McLean, 2015b), I had the opportunity to directly observe how smell walk participants made use of their whole bodies to access a perceived smell source. As I will later discuss, these experiences contributed to my understandings of the highly situated physical embodiments that are *practically*, and also *functionally*, involved in the activity of smelling (McBride & Nolan, 2018).

Considering the practical and functional activity of smelling from an inter-species standpoint, dog cognition expert Alexandra Horowitz (2016) explains that the neuroscientific account of olfactory perception, however valuable, does not contribute to our understanding of “how we use our noses” (Horowitz, 2016, p. 92) in the physical activity of smelling. While the functional process of “olfaction begins with as little as a few molecules of an odorant” (Horowitz, 2016, p. 35) there are a lot of structural, ecological and material contingencies that have to be in place before odours get, as she puts it, “upnose” (Horowitz, 2016); like, for example, physical proximity to the odorant. Furthermore, she insists “it’s not true that smelling happens by being alive and having a nose. It turns out that to smell, one actually needs to sniff. Not just breathe, not just sit with nostrils open” (Horowitz, 2016, p. 38). Horowitz explains that “a dozen muscles are dedicated to movement of the human nose” (Horowitz, 2016, 2016, p. 111), which, like other muscles, atrophy if we do not use them. Reflecting on her own attempts at ‘being a dog,’

Horowitz concludes, “ultimately what I have learned to do is simply to bother to attend to smells” (Horowitz, 2016, p. 272). While smellwalking is clearly well suited to getting our noses back down to earth in the *outdoor* environment, it is not clear how these practices extend to *interior* experiences of scent within the built or designed environment.

As Henshaw (2013) observes, “built environment professionals do not consider the physicality of the body within the environment” (p. 4). Her emphasis on the role of “bodily states” (Henshaw 2013) suggests physical knowledge (Piaget 1962) is a neglected priority for understanding how we understand our encounters with smell within the environment. As I noted previously, the corporeal and ecologically grounded dimensions of how we *practically* go about smelling are obscured by introspective and “head over heels” (Ingold, 2014) paradigms of sensory perception, which inform also informs much of the theorizing of smell in the context of the “sensory” (Drobnick, 2005, 2006; Stevenson, 2014) and “multisensory museum” (Classen, 2007; Levent & Pascual-Leone, 2014).

Considering the intentionality and disposition involved in getting odours ‘upnose,’ it is curious then to reconsider the role of smellscape in the context of built environments, such as museums (Drobnick, 2014), that engineer sensory *experiences* that are, more often than not, focused on the hedonic, affective and symbolic effects of *volatile* odours as a mode of immersion or simulation. In my prior studies of smell in the context of the “multisensory museum” (McBride, Harley, Mazalek & Nolan, 2016; Harley, McBride, Chu, Kwan & Mazalek, 2016; Kwan, Chu, Harley, McBride & Mazalek, 2016), my colleagues and I observed that museums have traditionally presented artifacts behind glass displays, decontextualized from their social, cultural, or environmental locations. Context is typically communicated through text displays or ocularcentric “look but don’t touch” formats (Harley, McBride, Chu, Kwan & Mazalek, 2016).

More critically, the glass case tradition “reduces vision to the interpretation of images” (Ingold, 2011b, p. 223), which is curiously reproduced in visually oriented multimedia that offer little meaningful role for the body, and especially already marginalized modalities such as smell. This is evident in recent promotion of neurocentric conceptualizations of the “multisensory museum” (Levent & Pascual-Leone, 2014) that draw on psychological and phenomenological paradigms of sensory perception and experience. Despite the acknowledgement that museum visitors seek more experiential and participatory interactions with history, “multisensory museum experiences are still few and far between” (Levent & Pascual-Leone, 2014, p. xviii). As well, as Kwan et al. (2015) note, scent-focused interactions within the museum environment are scarce (Drobnick, 2005, 2006; Keller, 2014; Stevenson, 2014). There are exceptions, as my study shows, such as the *Musée International de la Parfumerie* (MIP) in Grasse, the *Osmotheque* in Paris, and most recently, natural perfumer Mandy Aftel’s (2017) *Aftel Archive of Curious Scents*, which is located inside the perfumer’s home in Berkeley, California (Needleman, 2017). Despite these examples, there is an absence of *grounded* and *site-specific* research focused specifically on the selection and use of aroma *materials* as multimodal resources for learning about the properties of materials, rather than the use of scent for its immersive or psychological effect.

Apart from the attempt to include smell as a component of the multisensory museum, Gilbert (2008) questions the value of museums such as the *Osmotheque*: “I find it hard to get excited about visiting a perfume museum—how many little bottles can one stand to look at? (take one down, pass it around, 1,399 bottles of scent on the wall...)” (p. 233). Unlike the *Osmotheque*, the *Musée International de la Parfumerie* (MIP) where I conducted my research in Grasse, is not limited to a display of perfumery artifacts but the consideration of aroma more broadly as a sociocultural, scientific, agricultural and commercial object of inquiry. For example,

the MIP offers a range of hands-on workshops and programming (Musées de Grasse, 2015) that includes creative and practical learning activities that involve examining, touching and using raw materials and living plants to understand their properties and uses, which I will discuss in chapters four and five. As I will show, unlike the fragrance industry subject matter “lecturers” (Turin, 2006) in museums such as the *Osmatheque*, the guides in the MIP are qualified in social practices of cultural mediation (Caune, 1999a), which are developed in collaboration with the diverse identities and lived experiences of the public rather than the commercial interests of the fragrance industry. This distinction is especially crucial in relation the emphasis on, or absence of, raw botanical materials as a component of museum programming, given their de-emphasization in the pro-synthetics agenda of the commercial fragrance industry.

Finally, the use of smell as a curatorial strategy (Drobnick, 2005, 2006) raises critical questions about the differing missions and purposes of museums and galleries, given the increasing involvement of the fragrance industry in sponsoring and promoting scent-focused events (Davis, 2015; Hudson, 2015; Tate, 2015) that showcase the work and perspectives of pro-synthetics artists, technologists, entrepreneurs and industry-friendly researchers. As I will show, museums tend to have very different ethical, pedagogical and social accountabilities to the public than galleries and cultural spaces that are more explicitly oriented to aesthetic, rather than educational, objectives. In the absence of commonly held *critical* literacies of aroma and sensory phenomena (McBride & Nolan, 2018), it can be hard to distinguish accountable and critically reflexive programming from sensory edutainment or aesthetic provocation. As institutions are increasingly compelled to adopt so-called public-private funding models there is a need for critical, ethical and accountable “principles” (Harley et al., 2016; McBride & Nolan, 2018) for

sensory programming that prioritizes context over consumption. This next section focuses on the politics and aesthetics of aroma culture, olfactory art and commerce.

Smell culture, olfactory art and sensory simulacra

As Drobnick (2006) argues, “smell is in the process of being instrumentalized” (p. 2) in the form of synthetic chemical engineering, multisensory interface design (Ranasinghe, Cheok & Nakatsu, 2012) and marketing trends such as “behavioural fragrancing” (Damian & Damian, 2006) that disconnects scent from source. As Classen, Howes and Synnott (1984) note, in modern consumer culture, the “aura” (Benjamin, 2001) of fragrance replaces substance with substitutions, just aesthetic and classist distinctions of “taste” are intended establish a distance from the “common” and elementary experience of eating food (Bourdieu, 1984). This reflects Jean Baudrillard’s (1983) idea of the “hyper-real,” which is an apt descriptor of the symbolic goods produced by a billion-dollar chemical fragrance industry.

Extending this olfactory “simulacra” (Baudrillard, 1983) into the technological realm, the history of multisensory scent interfaces (Ranasinghe, Cheok, & Nakatsu, 2012) is a showcase of “vapourware” (McBride, Harley, Mazalek & Nolan, 2016). From the ‘AromaRama’ and ‘Smell-O-Vision’ scent delivery systems of the 1950s and 1960s (Gilbert, 2008; Paterson, 2006) and more recent perfumed olfactory displays (Kaye, 2003) to the “OPhone” (Stinson, 2015), “Scentee” (Scentee, n.d) these technologies are largely prototypes or novelty devices that deliver chemical scents of dubious origin. As delivery mechanisms for dispersing *volatile* compounds, the politics (Winner, 1986) of these interfaces is reflected in their dependence on synthetic aromachemicals.

As Drobnick (2006) observes, today’s scent technologies are, by and large, “precision air fresheners” (p. 348) such as the behavioural fragrance units sold to hotels, retail stores and

institutions that deliver automated ‘signature’ scents intended to create a distinctive ambiance and memorable brand association through the nose and other senses (Spangenberg, Grohmann, Sprott, 2005). If the *medium is the message* (McLuhan, 1964), these technologies exploit our olfactory illiteracy through gimmicks and tricks intended to focus our attention on hedonic and affective qualities rather than their material basis as chemicals. Thanks to our ambivalence, the olfactory media “field” (Bourdieu, 1993) operates largely without our notice, participation or consent.

Considering the political economy of the senses, or "the scandalous idea that the senses have a history" (Jameson, 1981, p. 229), reveals the ways in which capital has fragmented, commodified and reified (Horkheimer & Adorno, 2005; Lukács, 1971) the “ideal quantities” (Jameson, 1981, p. 229) of our senses into the symbolic goods of the culture industry. Without any structural consideration of either the functional or physical basis of these goods, commodity culture relies on a “vocation of the perceptual” (Jameson, p. 237) to separate the sensorial ends from the elementary means. Indeed, as Classen, Howes and Synnott (1994) have observed, “few perfume ads actually refer to smell, the sense to which their product is surely directed” (p. 189). What is being depicted (Armani, 2016), instead, is fantasy scenario that depicts the seductive powers of the fragrance rather than any reference to its aromatic components.

In the realm of commercial fragrance, these substitutes consist of mass-produced and proprietary synthetic aromachemicals that are framed as an aesthetic necessity that ostensibly expands the “artistic” choices available to perfumers (Ellena, 2012). As commercial perfumer Christophe Laudamiel (2016) exclaims in his pro-industry “manifesto,” “consumers shall be allowed to know that man-made molecules are fabulous things, they help protect the planet, foster the art and technologies and they have been used in the best fragrances” (Laudamiel, 2016,

p. 1), despite the not so “fabulous” fact that these molecules have been “detected in fish, milk and all manner of places they definitely shouldn’t be” (Turin, 2007, p. 27). The critical issue here is not that they are “man made” (as all aroma materials require some degree of human involvement), but what the materials *are, where* they were made (i.e., do they come from petrochemical feedlots or a greenhouse?) and also how (i.e., mode and scale of production) These narratives also reflect an implicitly modernist aesthetics (Burstein, 2012) that is discursively reinforced by polemical (i.e., fictional) anecdotes about romantic and misinformed consumers who naïvely believe that perfumes still come from flowers (Turin & Sanchez, 2009; Ellena, 2012). Such modernist narratives serve to reinforce the idea that natural and plant-based fragrances are a thing *of the past*, like the tastes of the elderly. Indeed, as Laudamiel declares, “it shall be further exposed that perfumers are not just inspired by flowers and the smells of their grandmothers” (Laudamiel, 2017, p. 2). Sadly, the use of ageist and sexist “anecdotes about Granny’s perfume” (Turin, 2006, p. 14) are too-common tropes in the disavowal of natural raw materials and an admonishment of those who hold positions contrary to a pro-synthetics dogma, including natural perfumers. But the narrative of consumer ignorance and their apparent nostalgia for fresh flowers conceals another object that these writers are mostly *not* talking about: cost and scale. Turin (2006) explains, “naturals are often superbly complex, rich smells. But they are not cheap, and their quality is variable” (Turin, 2006, p. 12). While it is plainly not feasible for global fragrance manufacturers to use naturally-sourced, fine raw materials, such as jasmine or rose (Ellena, 2011; Turin & Sanchez, 2006), these same materials are relatively accessible to independent perfumers, healers or crafts persons working at a local, rather than global, scale.

As Drobnick and Fisher observe (2006), contemporary artists are increasingly drawn to “the distinctive qualities of scent—such as its ephemerality, evocativeness, intimacy, variability,

intensity” (p. 163). For example, synthetic biotechnologist Christina Agapakis and headspace scent artist Sissel Tolaas (2012) frame smell as a form of “invisible” (Tolaas, 2011b) information and as a mode of artistic expression, using “Gas Chromatography–Mass Spectrometry” (GC–MS), or, ‘headspace’ technology, which is often used by commercial fragrance technicians as a means of identifying the molecular components of a competitor’s fragrance in order to recreate it (Turin, 2006). The GCMS is a kind of “electronic nose” (Gilbert, 2008) that captures odour molecules, which are then analyzed with the help of human subjectivity using “Principal Component Analysis” (PCA) (Agapakis & Tolaas, 2012). As Agapakis and Tolaas argue, industrial uses of technologies such as the headspace “*remove* human subjectivity and emotion from the classification of odours, to combine an individual’s senses into a statistically powerful cohort, or to *remove the human nose altogether*” (Agapakis & Tolaas, 2012, p. 571; emphasis added). While Agapakis and Tolaas acknowledge the value of the headspace for chemical and biological research, they suggest that the more subjective methods of artists (versus chemical engineers or technicians) balance precision with humanity. Prior to my doctoral research, I had no idea what a GC–MS was, or that it was one an essential technology for industrial fragrance production, yet it was clear that such high-end technologies, along with the costly aroma molecules required to reconstruct their data, are uncommon tools for most olfactory artists without ties to commercial fragrance manufacturing. While the GC-MS may be far from the non-specialist’s reach, it is presently the closest technological means of recording odours.

Outside of high-end ‘headspace’ fragrance art, natural perfumers emphasize the complexity and sensuality (Aftel 2001, 2005, 2014) of these essences and their intimate relationship with the body and, especially, the skin. For example, Aftel’s solid perfumes, which she sells in antique lockets, are applied to the skin with the fingertips, is a reminder of the

politics of objects in terms of the kinds of relations they reinforce or challenge. In Aftel's case, the colorful and tactile "sensuality" of natural materials (Aftel, 2014) contrasts starkly with those of commercial fragrance, which are often marketed in bottles that conceal the typically colourless petrochemicals inside.

Aftel argues that "perfume is meant to be smelled on the body, not in the air" (Aftel, 2001, p. 151), which reveals not only the historicity of ancient and modern modes of fragrance production, but also, the political economy that is masked by the disembodied ephemerality of corporate fragrance production. The deskilling of perfumery and its decontextualization from its more spiritual, holistic and cultural origins, along with the replacement of artisanal perfumers with chemical engineers, reflects the corporate reproduction of systems of exclusion intended prevent anyone but the most privileged, scientifically educated and commercially predisposed to acquire formal qualification as a 'master' perfumer. As Turin argues, "like most educational institutions" the most prestigious French perfume training institution, ISIPCA, "requires two years of university level chemistry prior to entrance" (Turin, 2007, p. 19), which is typically in addition to five to ten years of (often unpaid) apprenticeship, along with professional experience marketing and promoting commercial fragrances. According to Turin (2007) this is a barrier for many perfumers whose knowledge and aesthetic orientations are a product of their cultural and lived experiences:

Since the majority of older perfumers, including the very best ones, cannot tell one end of an aliphatic aldehyde from the other, this requirement is clearly perverse, and seems designed to exclude the Arty Types the school so sorely needs. (Turin, 2007, p. 19)

On the other hand, according to Aftel (2001) these same "perfume schools concentrate on synthetic ingredients," whereas natural perfumery is "uniquely suited for home study" (p. 9).

Given the explicitly ‘how to’ format of her books (Aftel, 2001, 2005, 2014; Patterson & Aftel, 2017), all that is needed, Aftel argues, is a “basic understanding of methodology, and an appreciation of the history and spirit of the essences themselves” (Aftel, 2001, p. 9). According to Aftel, in the past “perfumery remained chiefly the domain of private solo practitioners—apothecaries, ladies who mixed their own blends at home, and other anonymous souls” (p. 27). For Aftel, “to make a perfume is to experience, *not to analyze*” (p. 155; emphasis added), emphasizing the role of the perfumer’s own body in the creation of fragrances rather than today’s fragrances which are typically engineered using formulaic processes rather than hand-crafted.

Similarly, aromatherapists Kate and Peter Damian (2006) argue that traditional principles of natural and embodied fragrance composition, such as aromatherapy (Lawless, 2016), are abstracted by the commercial manipulation of our senses in the form of behavioural fragrancing. They explain that these modern techniques “do not necessarily require the use of the products of aromatherapy—pure essential oils” (Damian & Damian, 2006, p. 153), in order to conflate the holistic properties of essential oils with their scent (similar to the conflation of an orange *flavoured* drink with orange juice). For example, the notion that lavender can function as an all-purpose soothing scent is questionable given that aromatherapeutic interventions are “highly personal and idiosyncratic” (Damian & Damian, 2006, p. 155), and also culturally specific. Though synthetic scents can trigger pleasurable *hedonic* responses, the difference between “what the brain likes and what the body needs” is consequential (Drobnick, 2006; Damian & Damian, 2006, p. 156).

These perspectives emphasize that there are many other ways to appreciate what is “beautiful” about aroma (Aftel, 2002), such as their nature (i.e., essential oil or aerosolized cologne), provenance (i.e., laboratory or distiller) and source (i.e., flowers or petrochemical

feedlots). As well, many artists, healers, educators and craftspeople working in an independent capacity continue to use, process and, often cultivate, natural aroma materials for varied medicinal, aesthetic or spiritual purposes (Lawless, 2016). Accordingly, psychological appeals to emotions or commercial appeals to aesthetics, appear to be just as easily be reframed in political, spiritual or holistic terms by those who seek natural and organic and, even, scent free, products according their own values and needs, as opposed to the interests of corporations.

Conclusion: Rationalizing smell

Too often, the senses, and especially, smell, are reduced to scientific, psychological, aesthetic or philosophical abstractions, producing a kind of olfactory “imaginary” (Castoriadis, 1998) that has many benefactors. As I discussed in my introduction, smell is often framed in abstracted, perceptual, symbolic and immaterial terms. By and large, smell is still discursively produced as a problem awaiting a solution, a *puzzle* in need of solving or *mystery* that ought to be *de-mystified*. This framing, along with an aesthetics of *invisibility* and *immateriality* that privileges the molecular and volatile, over the physical or material, basis of smell, is reinforced by many of the perspectives I have discussed in this chapter. This includes cognitive processes, affect, memory, and acquired semantic systems that maintain smell as a “vertically integrated, classificatory knowledge” (Ingold, 2011a, p. 158). Moreover, and as I have shown, much of the psychological, neuroscientific and linguistic research on olfactory *learning* and *expertise* reflects investments in socioculturally regressive foundations of educational psychology that are now strongly opposed within education.

Considering the ocularcentricity of scholarly metaphors of knowledge as ‘illumination,’ when vision is continuously “textured” (Fairclough, 2001) as the preeminent mode of intellectual achievement, smell is only acknowledged in so far as it can made *visible* through aesthetic or

semantic representations. Invisibility is thus a *deficit-driven* rhetoric that frames odour according to what it is *not* (i.e., visible, tangible, lasting), often in the service of affirming similarly imaginary or affective use-values. I argue that these framings not only serve to decontextualize scents from sources, but also neglect any critical consideration of the physical, ecological, material or structural conditions and contingencies that *afford* their perception. Through this lens, I suggest that the story of smell does not begin with the translation of volatile molecules into symbolic goods, but with the concealment of the material conditions, ecologies and sociocultural contexts that bring them into being.

While Drobnick (2006) suggests that “smell is now considered one of the means by which visual media’s alienating effects can be mitigated” (Drobnick, 2006, p. 1), my review suggests that this may be easier said than done in the absence of an intervention of the paradigms and perspectives that rationalize and affirm these alienating effects and contribute to the conceptual abstractions and estrangement of sensory perception from situated context, to “rise” as Jameson (2009) puts it “from the universal to the concrete” (p. 185).

Chapter Two: Theoretical perspectives

Introduction

This chapter provides a review of theoretical perspectives that inform the critical, pedagogical and ecological development and foundation of my research questions, methodological selection and study design, along with a rationale for my own departures and interventions. It offers an analysis of underlying paradigms, philosophies, foundational concepts and debates associated with these perspectives to clearly show where or how this study extends or diverges from them. As I have suggested in the introduction and the literature review, dominant “head over heels” (Ingold, 2013) paradigms of perception have not only ordered the eyes over the chemical senses (smell and taste) but also maintain a similarly mind over matter relation to their sources and the environmental, physical and material forces, such as weather or physical locations, that afford their perception. I argue that such neurocentric Western sensory paradigms have often obscured the grounded knowledges that are quite literally, right under our noses. While phenomenology is often positioned as an intervention of scientific positivism it simultaneously “attempts to master the scandalous and unmasterable “phenomenon” and to convert it into a respectable “field of study” and academic discipline, an acknowledged branch of “philosophy” itself” (Jameson, 2009, p. 156). Apart from their apparent contradictions and bad faith premises, such “agonistics” (Lyotard, 1984) between the sciences and social sciences still flourish in the theorizing of the senses arts, humanities and social sciences.

In my introduction, I discussed how aroma culture constitutes an exciting, and definitively transdisciplinary, frontier for scholars in the social sciences and humanities, however “notoriously difficult” (Henshaw, 2013) for non-scientists. I suggested how this is further complicated by scientific paradigms but also by sensory and modal turns in social sciences and

humanities that reinforce traditional perceptual paradigms. This is, as I argued in the literature review, especially the case with smell, which has been almost entirely dominated by psychology and psychological subfields, such as psycholinguistics and sensory neuroscience. With these problems in mind, I have asked how it is possible to deliberately or meaningfully engage with aroma materials as a “multimodal” (Kress, 2009) resource for learning or communicating without first attending to the material, ambient or ecological properties and sources of aroma? This extends to the question of how we go about locating, identifying or understanding these resources using theoretical foundations or methods underwritten with the “pseudo-poetic discourse” (Jameson, 2009, p. 151) of philosophies that actively evade grounded or structural questions.

I begin this chapter with a critical analysis of dominant disciplinary perspectives, paradigms and debates associated with social and cultural theorization of smell and the senses, such as the anthropology of the senses and sensory anthropology, and their apparent methodological implications. I then discuss how, and to what degree, these tensions influenced my methodological choices and subsequent interventions I will discuss in my next chapter. This includes a focused discussion on the promises and limitations of multimodal analysis as an interpretive strategy for understanding and communicating about aroma materials/sources. I will then turn to a consideration of the modal “affordance” as it was initially proposed by James Gibson (1966, 2015) and later misappropriated by proponents of multimodal analysis. I will close with a discussion of Sarah Pink’s (2009, 2015) relatively new methodological intervention of sensory ethnography, with the goal of identifying ways to scaffold missing ecological and grounded dimensions of research on aroma that exceed the *ethnographic*.

The sensory 'turn' in social sciences and the humanities

Within the social sciences and humanities, much of the current theorization of sensory studies (outside of psychology and the physical sciences) can be attributed to the pioneering scholarship of Canadian anthropologists Constance Classen and David Howes. Their development of the field of *the anthropology of the senses* contributed a much-needed structural analysis of the social and cultural life of the senses (Classen, 1993, 1997). However, these perspectives are not without their detractors, such as social anthropologist Tim Ingold and his colleague digital media ethnographer Sarah Pink, whose differences with Howes were published in a lively debate in the *European Journal of Social Anthropology*, “concerning the prospects for an anthropology that would highlight the work of the senses in human experience” (Ingold, 2011b, p. 313). While Ingold’s contribution is primarily a response to Howes’ criticisms of Ingold’s perspectives, his outline of the distinctions and differences in the foundational paradigms that underwrite their differing positions is a useful starting point from which to articulate their respective influence on my chosen theoretical foundations and use of Pink’s (2009, 2015) sensory ethnography. For my purposes, Ingold critique of Howes framing of sensory perception as a “cultural construct” that reduces the sense organs to “instruments of playback, capturing moments of experience and relaying them to a reflexive consciousness for subsequent review and interpretation” (Ingold, 2011b, p. 315), also extends to the similarly determinist, “device paradigms” (Feenberg, 2000) of Marshall McLuhan’s sensory extensions (McLuhan, 1964).

Echoing Gibson’s (2015) reframing of perception as an active and “ecologically” contingent process rather than an outcome of cognition, Ingold refutes the idea that “in order to ‘make sense’ of the world, these induced sensations have to be cognitively assembled (or

‘constructed’) in terms of received cultural categories” (2011b, p. 314), which also extends, for Gibson, to the scientific modeling of phenomena into classifications. Drawing on his earlier theorizings of the “appropriation of nature” (Ingold, 1986, 1992), Ingold says he “reject[s] the representational theory of knowledge on which Howes founds his anthropology of the senses” (2011b, p. 315), which is further elaborated in Ingold’s book *Being Alive* (2011a) and, to lesser degree, in perspectives of Sarah Pink (2011b).

Beginning with phenomenology, I will now examine how these shared ontological investments inform sensory and modal turns in the social sciences and humanities with questions about the role of agency in the absence of structural analysis.

Phenomenology: The sensed experience as a “poetizing” project

Among the most formative influences on contemporary theorizings of the lived and embodied experience of sensory phenomena is Maurice Merleau-Ponty’s phenomenology of perception, which is oriented to the immediacy of the ontological and subjective dimensions of experience as a spatio-temporal process of “*sinngebung*” (sense giving) and “transformation” (Merleau-Ponty, 2012). Educational researcher Max van Manen (1997) argues that “phenomenology is the study of the lifeworld—the world as we *immediately* experience it *pre-reflectively* rather than as we conceptualize, categorize, or reflect on it” (p. 9, emphasis added). Elaborating on the central tenets of phenomenology, van Manen describes the phenomenological method of documenting of the lived experience as a “*poetizing* project” involving “incantative, evocative speaking, a *primal* telling, wherein we aim to involve the *voice* in an original singing of the world” (van Manen, 1997, p. 13, emphasis added). However, as Jameson (2009) argues, the paradox of these “poetizing” strategies and their “primal” distancing (Lyotard, 1986) from the *rational* and the *institutional* are simultaneously:

official attempts to master the scandalous and unmasterable “phenomenon” and to convert it into a respectable “field of study” and academic discipline, an acknowledged branch of “philosophy” itself if not indeed (as Husserl himself wished) its very foundation. (Jameson, 2009, p.p. 156-7)

While Merleau-Ponty accepted the idea that “the senses are distinct from each other and distinct from intellection insofar as each brings with it a structure of being that can never be precisely transposed” (2012, p. 234), he also argued that a conscious orientation to the senses as separate functions or channels requires an “*abnormal* attitude and cannot be useful for *the analysis of direct consciousness*” (p. 234; emphasis added). Yet the phenomenological critique of differentiated “organs of sense” (Serres, 2008, p. 70), also over-determines *consciousness* as the focus of sensory experience negating crucial differences between the operation of sensory processes, and also their stimuli (i.e., smell and taste as chemical senses versus hearing or sight).

Merleau-Ponty’s explicit rejection of a scientific and functional understanding of “the human organism as a *physical system* in the presence of stimuli themselves defined by their physico-chemical properties” (Merleau-Ponty, 2012, p. 10, emphasis added) is especially problematic in the case of smell, which is distinguished from other sensory modalities precisely by these physico-chemical properties. Unlike the far, or “long-distance,” sense of vision (Martin, 2013) privileged by many phenomenological accounts, smell and taste require chemical odorants to make direct contact with receptors in order to be perceived. Whereas recorded or reproduced sound frequencies or light wavelengths are also perceived as sound and vision, odours and tastes cannot (yet) be perceived independent of chemical stimuli. Although Merleau-Ponty was not alone in his critique of the scientific essentialism of measurement, classification and categorization, this critique, which is still, surprisingly, so integral to many contemporary

theorizations of the senses, neglects more grounded and intersectional reevaluations of the sciences (Oakley, 2000).

While there have been useful reconceptualizations of phenomenology, most notably from technological, feminist, queer, critical disabilities and intersectional perspectives (Allen-Collinson & Owton, 2015; Connolly & Craig, 2002; Ihde & Selinger, 2004; Sobchak, 1992), the over-determination of subjectivity that often foregrounds this work is often infused with a distrust of the empirical. As Oakley (2000) argues, “if there are really no such thing as ‘facts’ about the way people are treated, then there is also no such thing as discrimination or oppression” (p. 298). Oakley’s (2000) historical examination of gender and method in the social sciences, *Experiments in Knowing: Gender and method in the social sciences*, offers an extended critique of “feminist anti-positivism” and its conflation of “objectivity” with “objectification” (p. 34). Oakley (2000) argues that the gendered “contest” between quantitative and qualitative methodological paradigms is just another iteration “of the war between the sexes” that rehearses gendered “ways of knowing” that discursively produce the qualitative as “soft,” “unreliable” and “feminine,” and the quantitative as “experiential,” “hard,” “reliable,” and “masculine” (p. 42). And so, for Oakley rejecting “‘objective’ realities” (p. 298) is not simply a disavowal of positivism, but also of the kinds of *facts* upon which “feminist (and other) emancipatory political projects” depend (Oakley, 2000, p. 268).

Donna Haraway’s (1988) *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective* is written in part as a response to similarly anti-positivist standpoints in first wave feminism. In it, Haraway critiques the “partial perspectives” of *both* cultural relativism and scientific totalization as equally problematic “god tricks” that promise “vision from everywhere and nowhere equally and fully” (p. 584). However, as Haraway

cautions, the ability to “see from below is a problem requiring at least as much skill with bodies and language, with the mediations of vision, as the ‘highest’ technoscientific visualizations” (p. 584). To this end, Haraway calls for doctrine of, what she terms, “embodied objectivity” that “accommodates paradoxical and critical feminist science projects” as “situated knowledges” (p. 581). Through such a situated positionality “the strong program in the sociology of knowledge joins with the lovely and nasty tools of semiology and deconstruction to insist on the rhetorical nature of truth, including scientific truth” (Haraway, 1988, p. 577). She argues for the need for “enforceable, reliable accounts of things not reducible to power moves and agonistic, high-status games of rhetoric or to scientific, positivist arrogance” (p. 580) that my own study seeks to reconcile through an implicit critique of legitimizing disciplines and domains over the situated knowledges that are possible without them.

The idea that there can be some *primal* experience of “being” in the world, independent of external (or internalized) forces, reflects phenomenology’s essentialism of a so-called “pre-reflective” state (Merleau-Ponty, 2012) that is supposedly be accessed through a metaphysical “rupture” that were central to *avant-garde* modernist aesthetics. While the phenomenological perspective affirms (if not rationalizes) metaphysical, or “spectral” (Jameson, 2009) dimensions of *being* rejected by positivist science, structuralist critiques of its “pre-reflective” (Merleau-Ponty, 2012) premise call attention to its agentic framing of “rupture” that does not account for the role or influence of structural or social forces beyond their abstractions into *forms* of consciousness. As Foucault (1990) argues, power operates in a “multiplicity of force relations” (p. 92) that are most effective when they conceal their operation, and this is why while we think we may be done with structuralism it is never really done with us.

Structural forces: situating smell beyond invisibility

In order to draw attention to the more concrete and tangible dimensions of aroma over and above the ontological or symbolic, it is crucial to understand the material and structural dimensions that contribute to “reifications” (Lukács, 1971) of smell into “symbolic goods” (Bourdieu, 1984). Such a critical analysis serves to unmask underlying power relations, such as the influence of the chemical industrial complex, that substitute ecologically, socioculturally and physically “situated” experiences (McBride & Nolan, 2018; Fors, Bäckström & Pink, 2013) with engineered simulations that are deliberately decontextualized from their ecological and sociocultural sources and locations.

Howes (2005b) describes the sensorious subconscious of capital and consumption, as it constitutes an *empire* of the senses and a hegemonic sensory order that he calls “hyperaesthesia” (Howes, 2005b). For Howes, Hyperaesthesia designates the subversion, amplification and decontextualization of the senses within the fast sensory order of consumer capitalism such as the super-sized and amplified flavours and fragrances manufactured by chemical companies. This hyperaesthesia, Howes argues, contributes to social ideologies “conveyed through their sensory values and practices and the processes by which history is turned into nature” (Howes, 2005b, p. 4).

As Langdon Winner (1986) contends, the *politics* of material and built artifacts are linked to, and constitutive of, “specific ways of organizing power and authority” (p. 8). His arguments invoke Foucault’s (1991) “strategical model” (p. 92) of power as “a multiplicity of force relations” (p. 92) that are most successful when they *mask* and *conceal* their operations in both the networked data unconscious of our public sphere and the bio-power that internalizes it through our embodied interactions and habituation. Winner’s (1986) early framework for

analyzing the politics of technological artifacts, maps onto many other kinds of artifacts and even beyond the material in terms of his emphasis on questions about their “compatibility” with existing power relations and social relations in the interests (p. 8). Despite his original use in the context of technologies, many of his examples draws on, and apply to, designed objects along with interactions, tools, resources and environments. In the case of my own study this can also apply to the so-called *intangible ephemeral* or *invisible* information of odours and the apparent *politics* of aroma materials and sources. Winner’s framework, while drawn from technologies studies, helps me to articulate and intervene on agentic aspects of social constructivist orientations, such as multimodal analysis and phenomenology, that appear to over-determine human agency to somehow *rupture* otherwise inaccessible, internalized, “massified” (Lukács, 1971) or complexly distributed forces and “power flows” (Foucault, 1991). It also helps identify hidden or concealed ideological values and complicities that are either inscribed in, or *acquired* through, the selection, organization or use of environments, materials and practices. In the case of smell, these dimensions are neglected by the *mind over matter* perceptual biases of smell that neglect odour sources in the form of aroma materials or ecologies.

For example, and as I will return to in the conclusion of the dissertation, the continual framing of odours using rhetorics of invisibility is highly compatible with the interests of a chemical industrial complex that manufactures inexpensive, colourless, largely synthetic aroma chemicals marketed for affective or hedonic use values as symbolic goods that ostensibly speak to our “primal” (Merleau-Ponty, 2012) desires and aspirations rather than their complexity or qualities as aroma materials. Whereas the often noted complexity, depth and textures of natural aroma materials (Aftel, 2002) such as a Turkish rose absolute, waxy jasmine concrete or thick syrupy plant resins such as *cistus labdanum*, are not only intensely coloured but also highly

tangible in their viscosities and tactilities. Synthetic aroma chemicals, on the other hand, typically sold in crystallized form (Turin, 2006), are devoid of the kinds of observable or tangible properties, such as colours, viscosities, tactilities that might communicate something of origin, provenance or production. Considering Winner's compatibilities framework once more, it is curious then that so much theoretical work on the senses and sensory phenomena reinforces and maintains the very same semiotic and affective use values of smell that are also mobilized by Big Fragrance (and a chemical industrial complex) that spends billions annually on marketing and lobbies that work hard to decontextualize scent from source (Cole & Whelan, 2015). Considering smell's importance as our "chemosensory custodian of survival" (Martin 2013, p. 3) the indifference to, and even rejection of, more grounded, applied and scientific approaches to sensory evaluation, such as detecting, identifying and discriminating between odours also reflects an indifference to *skilled* domains of sensory practice, such as sommeliers or cooks, where practitioners are expected to understand the ingredients and materials (Patterson & Aftel, 2017) as well as being able to *communicate* with and through them.

I now turn to multimodal analysis as a way of moving from theoretical orientations to perception and sensory experience to the conceptualization and interpretation of *modes* of stimuli in order to understand how aroma is constituted as a modal 'affordance' of substances, materials, ecologies, environments and locations. I will also discuss how to approach modes as a means of including the ecological along with structural and sociocultural, as active and tangible (Dourish, 2004; Ferneaus, Tholander and Jonsson, 2008) forms of information and communication.

Multimodality: Knowing and communicating beyond the word

Proponents of the multimodal analytic approach such as Gunther Kress, Theo Van Leeuwen and Carey Jewitt (2009) argue in the *Handbook of Multimodal Analysis*, traditional

communicative forms, such as speech and writing, are “no longer adequate” (Jewitt, 2009, p. 3) to understand and participate in virtual and emergent cultures that make use of “new communicative patterns” (Kress & Selander, 2012, p. 265). According to multimodal scholars, digital culture requires “substantially different” forms of literacy, and “new conceptualizations of learning” (Kress, 2011; Jewitt & Kress, 2003; Kress & Selander, 2011; Lotherington & Jenson, 2011; Iyer & Luke, 2010) that move “beyond language” (Jewitt, 2009) to embrace “non-canonical” forms of representation such as “image, writing, gesture, gaze, speech” (Jewitt, 2009). While multimodality appears to offer an expanded, and much needed, reconceptualization of “communication” (Fiske, 2010) and literacy, it is unclear how this predominantly visual approach applies to the “whole” range (Jewitt, 2009) of modalities “people draw on and configure” (Jewitt, 2009, p. 3). This perspective is underwritten by the social constructivist perspective that people co-construct knowledge through the creation of ideas, experiences, and material objects, including conceptual material, and share them with other members of “communities of practice” (Lave & Wenger, 1991; Jonassen & Strobel, 2006) reflecting earlier foundational social theories of learning such as Vygotsky’s (1980) “social constructivism,” and Papert’s (1980) “constructionism” along with newer theories of “situated cognition” (Henning, 1998)

A relatively “new approach” (Jewitt, 2009, p. 5), multimodality proves challenging to clearly define, even for its proponents. For example, in her introduction to the *Routledge Handbook of Multimodal Analysis* (2009), Jewitt describes multimodality variously as a “theory,” a “perspective,” a “field of enquiry” and a “methodological application” (p. 12) that addresses “representation, communication and interaction as something more than language” (p. 1). While Jewitt states that language is only one part of what is referred to as a multimodal “ensemble” (p.

14), she asserts that multimodality is “indeed an analysis of language, but language as it is nestled and embedded within a wider semiotic frame” (p. 2). The central concept of “mode,” is, according to Kress (2009, p. 20), not a theory, but “culturally given resource(s),” such as “image, writing, layout, music, speech, moving image” (p. 54). Kress (2009) asserts that modes have two meanings: one emphasizes the “social”; the other, the “social semiotic” (p. 58). These distinctions, also inform the operational methodologies of multimodality, which, however emergent, are described as a “systematic functional approach” (Jewitt, p. 3) that includes: discourse analysis, multimodal interaction analysis, and social semiotic multimodal analysis (Jewitt, 2009; Kress & Selander, 2013). Described as a ‘radical’ (Jewitt, 2009, p. 19) departure in linguistics, multimodality is an extension of the ‘New Literacy Studies’ founded by the New London Group (1996).

In education, the multimodal turn is primarily associated with new forms of learning and meaning making (Jewitt, 2006; Jewitt, 2009; Kress, 2009; Kress, 2013; Kress & Selander, 2012) that increasingly inform 21st Century (Jenson, Taylor, & Fisher, 2010); educational priorities that also call for different approaches to curriculum, instruction and cultural production (Jenson, Taylor & Fisher, 2010; de Castell, 2015; Thumlert, de Castell & Jenson, 2015). This includes ‘non-traditional’ media texts such as graphic novels, websites, and videogames, that communicate through high-end graphics, interactive objects, moving images, music, and sound effects, each of which ‘affords’ differing semiotic ‘potential’ as a ‘mode’ for meaning-making. Proponents of the multimodal term emphasize its emancipatory potential to “reconnect linguistically disenfranchised learners” (p. 21) who struggle with traditional, text-heavy formats, such as novels. From this social-constructivist perspective, they argue, “everyone” can take part in “engaged communication and learning” (Kress & Selander, 2012, p. 266), where meaning is

negotiated rather than prescribed. Kress and Selander describe people as “sign makers” viewing social action as the “generative basis of meaning” (p. 267).

Multimodality is framed by its proponents as a transdisciplinary move away from its foundations in linguistics to integrate perspectives from anthropology, sociology, ecological psychology, cultural studies, and visual studies, which Jewitt (2009) suggests is now increasingly “commonplace” (p. 1) in these fields. While she acknowledges that the multimodal approach is “unsettled” and in need of “further development” (p. 5) it is especially compatible with the anthropology of the senses. For example, in his contributions to the *Routledge Handbook of Multimodal Analysis* (Jewitt, 2009), anthropologist David Howes offers his critique of psychology’s “modular” conception of the sensorium and its apparent influence on “common” assumptions “that each sense has its proper sphere (e.g., sight with colour, hearing with sound, and taste with flavour)” (p. 225). Citing the work of Calvert, Spence and Stein’s (2004) *Handbook of Multisensory Processes* as “the most authoritative work in this new field” (Howes, 2009, p. 226), Howes suggests that their model of “cross-modal plasticity poses a serious challenge to the conventional model of the sensorium as consisting of five structurally and functionally distinct modalities” (p. 226). Proponents of these claims such as Spence also emphasize the ways our brains are easily deceived or “fooled” (Spence, 2017), often making use of optical illusions as a means of illustrating perceptual fallibilities. Similarly, the argument that sommeliers’ or perfumers’ brains are somehow differently wired than non-professionals (Goode, 2016) reinforces psychological paradigms of “learning” as a function of cognition and behaviour, rather than situated social, cultural or experiential factors such as “practice” (Anders, Krampe, & Tesch-Römer, 1993) or training and access to resources and activities. However compatible with Howes’ cultural and anthropological conceptualizations of sensory integration, he fails to

bracket-off his limitations of his outsider status to neuroscience and the contestations of sensory neuroscientific claims from within their own fields of neuroscience and psychology.

For example, the work of Spence and his associates has been criticized by Neil Martin as “atheoretical, trivial, and epiphenomenal” ([Martin quoted in] Twilley, 2015) in the absence of the rigor expected from scientific or experimental psychology claims. As I will elaborate on in my conclusion, such claims, which frequently make use of sensory tricks and deception, are frequently recruited in the mantras of Big Food and Fragrance marketers who encourage impulsivity and habituation over critical consciousness. As Moss (2013) argues, “their advertising uses every psychological *trick* to overcome any logical arguments we might have for passing the product by” (p. 346, emphasis added).

Curiously, these the perspectives of sensory neuroscience and the anthropology of the senses are surprisingly unified in their affirmation of the *constructedness* of sense-making and also their mutual disavowal of individuated sense modes, apart from established scientific understandings of functional sensing. Given the visual bias of digital culture, the promotion of such a post-functional and epiphenomenal paradigm of sensory perception, in favour of the further abstraction of modalities that have proven the most difficult to instrumentalize: smell and taste.

Drawing on some of the perspectives that directly or indirectly inform the multimodal paradigm, I argue that multimodality, as it is currently theorized, reinforces the same “hylomorphic” (Ingold, 2011; Ingold, 2014; Simondon, 2005) (or, ‘mind over matter’) models that underwrite theorizations of material culture as the “unification of stuff supplied by nature with the conceptual representations of a received cultural tradition” (Ingold, 2013, p. 20). As Pink (2011) notes, there is also a fundamental difference between proponents of the multimodal

turn and Howes' anthropology of the senses in their conceptualizations of differentiated or integrated sense modes. Apart from his acknowledgement of sensorial "conjugations" (Howes, 2009), Pink suggests that Howes' emphasis on culturally monolithic sensory "orders" however compelling, is not "a basis upon which to build a universal theory about how communication happens" (p. 265). However, there is also the counter argument that the whole-cloth phenomenological and neuroscientific disavowal of differentiated sensory function is shortsighted given the significance of physiological, anatomical and chemical dimensions of perception to our health, well being and survival (Martin, 2013). Citing the more essentialist traditions of cross-cultural anthropology, Pink challenges the use of Western sensory orders as a basis from which to frame modal units or categories. Instead, Pink (2009) suggests that we look to the lived experience for a more situated and "idiosyncratic" understanding of sensory experience as an "ongoing" process and not an expression of existing culturally-specified sensory orders.

While Pink and Ingold share Howes rejection of the modular view of the senses, they contest his view of sensorial orders. Pink also contests Kress's and van Leeuwen's framing of the senses, which she argues, "is built on an understanding of culture as a set of readable representations that can neatly be placed in mutually exclusive categories with their own characteristics, and that are perceived through differentiated channels of sensory information" (p. 268). Given the social and cultural attribution of what counts, or is recognized, as a *semiotic resource*, it is problematic that multimodality rarely acknowledges the ecological or extra-social basis of modes beyond.

Modal affordances of/as/for ‘meaning-making’

Among the “core concepts” of multimodality (Jewitt, 2009, p. 14) is the “modal affordance” (Jewitt, 2009, p. 24), which plays an important role in defining what counts as a mode. For example, Kress describes the modal “potential” of the intonation, pitch, loudness, and duration of the human voice in “producing chunkings of meaning similar to paragraphs in writing” (Kress, 2009, p. 55). Kress (2009) suggests that modal affordances are “socially shaped and culturally given resource[s], for meaning making” (Kress, 2009, p. 54). According to Kress, the ‘social’ meaning of mode is that which is shared and shaped within a community or group (p. 59), whereas ‘social semiotic’ meanings have formal “requirements” that serve consistent ideational, interpersonal, and textual functions (p. 59).

However, the idea that the agentic work of social and cultural shaping is ultimately realized in a “semiotic regime” is, according to Bourdieu and Passeron (1977), key to “how conventions stabilize around practices” (p. 5) to “reproduce” existing knowledge paradigms and the arbitrary symbolic capital these conventions confer. As Ingold (2011) observes, the genealogical nature of such “work,” and especially work focused on “identity objects,” is underwritten by genealogical concepts of lineage, where the “bestowal” of meanings is “specified independently and in advance of their life in the world” (p. 142). In response to the anthropocentric idea that ‘meaning’ is the product of social or cultural shaping, Ingold (2011) asks: “are we really to believe, as advocates of cultural reason would have it, that all meaning is symbolic, and therefore that non-humans inhabit meaningless worlds?” (p. 77). For example, Kress’ argument that a “focus on materiality marks two decisive moves; one is away from abstraction, such as language, the linguistic system or grammar towards the specificity, the materiality of modes developed in social uses” (Kress, 2009, p. 57), whereby ‘use’ is framed as a

purely sociocultural outcome, neglects other ecological or living entities that are now understood to communicate information to each other and to other species through chemical, sonar and other forms quite unlike our own. As Bourdieu and Passeron (1977) note, the selection of meanings that:

defines a group's or a class's culture as a symbolic system is arbitrary in so far as... [it] cannot be deduced from any universal principle, whether physical, biological or spiritual, not being linked by any sort of internal relation to 'the nature of things' or any 'human nature.' (p. 8)

is a crucial reminder of a need for a broader conceptualization of meaning-making that involves the ecological. In which the “nature of things” moves beyond not only, language, but also philosophical determinism. Thus, an apparent limitation with multimodal analysis is how the focus on a social-semiotic basis for meaning potential often obscures or evades any engagement into the qualities or properties of the materials out of which that modal affordance is composed. Like perfumers, this is certainly the case for visual artists working in traditional media such as pigments, whose deliberate artistic uses of those media are based on their understanding of the properties, qualities or behaviours of those materials and what they *afford*. This is especially the case for perfumers working with natural aroma materials with qualities and that can be in a living, liquid, solid, semi-solid or volatile form. In this context the modal affordances of an aroma material include not only the volatile odour and its hedonic or symbolic effects but also its colour, tactilities, viscosities.

In the context of the research undertaken for this dissertation, multimodal analysis was suitable in my discussions of the specifically social-semiotic aspects of communicating with and through aroma materials as in the case of Chapter Four, which focuses on their use in the

museum context. As well, multimodal analysis helps me to translate (in this traditional scholarly text-heavy format) some of my extra-social and applied experiences, participation with, and observation of, materials and substances into the kinds of scholarly ‘narratives’ that respond to my theoretical questions.

The medium is the message: ecological affordance

For Gibson, ecological affordances refer to the environmental and ambient dimensions of substances, surfaces and optic arrays that people, animals and other entities make use of relative to their needs and interests. As Gibson (2015) notes, perception is not only a matter of physiological functions, anatomical structures or neuropsychological processes but also environmental forces that afford perception:

a medium of air or water allows rapid chemical diffusion whereas the earth does not.

Specifically, it permits molecules of a foreign substance to diffuse or dissolve outward from a source whenever it is volatile or soluble. In this way, the medium affords “smelling” of the source, by which I mean detecting of the substance at a distance....

Indeed, it is what makes a chemical emanation from a source foreign to the medium itself, and thus capable of being smelled. (Gibson, 2015, p. 14)

Gibson’s approach to ecological perception is a crucial intervention on traditionally cognitivist models of olfactory and sensory perception that rarely acknowledge or even account for the ecological, environmental or structural factors that exist outside of the perceiver. Recalling Marshall McLuhan’s dictum “the medium is the message” (McLuhan, 1964), Gibson’s affordance-as-medium-in-use helps to articulate the messages of phenomena, such as light, surface, substances, as components of the perceptual process that cannot be attributed to sensory

processing alone and as a way of thinking about information and communication beyond but not necessarily *outside* of culture.

It is important to note that the multimodal notion of affordance contests and rejects Gibson's original concept arguing that it "adequately acknowledge the extent to which tools... are shaped by people's use of them in specific social situations" (Jewitt, 2006, p. 26).

The 2015 edition of Gibson's *Ecological Approach to Visual Perception*, features the following passage about Gibson, who: "criticized cognitivism in the same way he had attacked behaviorism before, arguing strongly in favor of direct perception and direct realism, as opposed to cognitivist indirect realism. He termed his new approach 'ecological psychology'" (Gibson, 2015, front matter). As Ingold (2011a) explains, Gibson was "reacting *against* the cognitivism of mainstream psychology and the Cartesian premises on which it rests" (p. 11, emphasis added), and more specifically the belief "that perception is the achievement not of a mind in a body, but of the whole organism" (p. 11) in reciprocal and dynamic activity with environments. Gibson describes some of the differences between traditionally "mentalist" perceptual paradigms and his own ecological approach:

The redefinition of perception implies a redefinition of the so-called higher mental processes. In the old mentalistic psychology, they stood above the lower mental processes, the sensory and reflex processes, which could be understood in terms of the physiology of receptors and nerves. These higher processes were vaguely supposed to be intellectual processes, in as much as the intellect was contrasted with the senses. They occurred in the brain.... I am convinced that none of them can ever be understood as an operation of the mind. They will never be understood as reactions of the body, either. (Gibson, 2015, p. 243)

Instead, Gibson proposes that “what we perceive when we look at objects are their affordances, not their qualities” (Gibson, 2015, p. 126), by which he distinguishes between qualities in the scientific sense (as measurable or classifiable and essential properties) to specify them in relation to their environmental contingencies, locations, interactions with other phenomena and uses by humans and animals. Gibson’s perspective also highlights the limitations of classification and dependence on fixed categories without recourse to contingencies, context or uses:

As Ludwig Wittgenstein knew, you cannot specify the necessary and sufficient features of the class of things to which a name is given. They have only a ‘family resemblance.’ But this does not mean you cannot learn how to use things and perceive their uses. You do not have to classify and label things in order to perceive what they afford (Gibson, 2015, p. 126)

Despite his highly explicit disagreements with particular paradigms or perspectives, Gibson is often misunderstood and misrepresented. For example, multimodal analysis frames Gibson’s work as “cognitive perception” (Jewitt, 2009, p. 25, p. 293), which is a remarkable oversight considering that his ecological theory of perception is explicitly anti-cognitivist. Central to this theory is Gibson’s (2015) concept of ecological “affordances,” which are specifically contingent on, and relative to, the environments in which perception occurs:

The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment. (Gibson, 2015, p 127)

However, while Gibson's ecological perspective and his concept of affordances offers a useful *post-cognitivist* critique of perception, the priority he gives to vision has little to say of the chemical senses of smell and taste. Paradoxically, rather than exploring a much needed extension of Gibson thought into questions of chemical sensing, many scholars uncritically valorize the evasion of functional sensing as a virtue rather than a limitation.

This final section looks ahead to the emergence of sensory trends, such as the recent, circulation of a group of highly coordinated and well promoted neuroscientific claims that appropriate sensory neurodiversities, such as synaesthesia (Cytowic, 1993, 2010), as all-purpose tropes for the "perfect meal" (Spence & Piqueras-Fiszman, 2014; Twilley, 2015; Spence & Youssef, 2016) of their *off-menu* post-functional (Moravec, 1997) futurist sensoria.

Sensory exceptionalism and the appropriation of neurodiversity

Unlike other forms of neurodiversity, such as Autism (Broderick & Ne'eman, 2008), the neuro-phenomenon of synaesthesia is conventionally framed as a *valued* sensorial difference, if not a sensorial "super power" (Cytowic, 1993; 2010), which is also reflected in its cultural appropriation as an aesthetic "technique" of modernist, futurist and fascist art (Perloff, 1984, 1986; Theall, 1995; Marinetti, 2009; Rainey, Poggi & Wittman, 2009). Such selective appropriations of neuro-sensorial difference reflect, as many neurodiverse scholars have argued, the ways that neurodiverse persons are more spoken *for* and *about* than speaking (Broderick & Ne'eman, 2008; Nolan & McBride, 2015; Yergeau, 2011) in psychological accounts that privilege the ventriloquism of neurodiverse subjectivities above the self-advocacy, resistance (Nolan & McBride, 2015) of the *actually* neurodiverse. For example, *The Handbook of Multimodal Analysis* (Jewitt, 2009) defines synaesthesia as "an artistic, cultural and even spiritual *aspiration*, quite apart from whatever might be said about it as a neurological *oddity*" (p.

306, emphasis added). This problematic framing of synaesthesia as a “neurological oddity” and “aspiration” affirms the symbolic status of sensory neurodiversity as a *conceptual* signifier of aesthetic “distinction” (Bourdieu, 1984). As with racialized, gendered and sexualized subjectivities, the fetish of sensory neurodiversity similarly evades the practical realities of individuals who don’t trade on their differences as a form of *aesthetic* currency, focusing, instead, on the representation of an *idealized* Other (hooks, 1992) as an object of desire. This is similar to the scholarly and popular cultural representation of Autistic “systematizing” as a “talent” (Baron-Cohen, Ashwin, Ashwin, Tavassoli & Chakrabarti, 2009), which reinforces the ableist fetish of the autistic savant. The notion that neurodiversity is somehow fair-game for appropriation, and valued as a gift *rather than* a disability, signals a profound ignorance of the abundant perspectives on the politics of these *negative/positive* binaries that are maintained in the literature psychology, neuroscience and psycholinguistics. I liken this fetish of neuro-exceptionalities to what American social activist bell hooks terms, “eating the other.” As with the racialized fetish of black culture and identity as “a seasoning that can liven up the dull dish of mainstream white culture” (hooks, 1992, p. 366), hooks suggests that the symbolic cultural consumption of the Other, or what is *coded* as Other, not only exploits, but also “*denies* the significance of that Other’s history through a process of decontextualization” (p. 373, emphasis added).

This is especially the case for the neurodiverse whose identities are mediated by those who “claim control over the narratives used to define a person, place, experience or term” (Broderick and Ne’eman, 2008, p. 471), such as neurotypical (Broderick & Ne’eman, 2008; Nolan & McBride, 2015; Yergeau, 2011) psychologists and psychology researchers. These forms of cultural disablement operate first and foremost as discursive speech acts through which hegemonic inscriptions of ‘normalcy’ (Davis, 2006) are constantly reinforcing a binary of

normal and abnormal subjects. Similarly, in his *History of Madness*, Foucault (2009) suggests that the construction of the mad subject is always a relational act that “defines him, exposes him wholly, through objective comparisons, to the gaze of reason” (p. 181).

While neurodiverse self-advocate scholars such as Melanie Yergeau (2011) embrace the synaesthetic turn for its *transgressive* potential as a way of *talking back* to the disablements of logocentric compositional norms, neurotypical scholars continue to exploit synaesthesia as a kind of sensorial “superpower” (Cytowic, 1993; 2010) while regarding other forms of sensorial differences as unremarkable or deficient. Thus if neurotypical researchers and scholars really seek to transcend “normative” (Davis 2006) modes of knowing, perceiving or sensing, their work should necessarily begin with the margins, and not the centre, of the hegemonic disciplines that support and affirm, rather than ventriloquize, such non-normative perspectives. There is also a critical need for a more socially accountable, responsible and critical acknowledgement of the historicity of synaesthesia as a fixture of futurist and fascist aesthetics that similarly valued and devalued individuals and groups along a similarly repugnant binary of “deficiency” and “exceptionality.”

Conclusion and theoretical standpoint

In summary, through my critical analysis of these theoretical foundations and perspectives I have drawn attention to the kinds of practical, critical, ecological or structural considerations that are involved in sensing or making sense beyond a retreat either back into texts or else back inside our own consciousness rather than through or with the phenomena, substances or processes ostensibly engaged.

For example, while phenomenology is compatible with holistic and arts-based educational philosophies and the theological and spiritual dimensions of critical pedagogy

(hooks, 1997; Freire, 2000; 2014; 2015), it is also indifferent to grounded and structural questions of emancipation that involve sociocultural accountabilities to very “real” and “empirical” and “measurable” (Oakley, 2000) contexts of oppression, exploitation and marginalization that involve *grounded*, rather than “poetic,” approaches to research as a form of political *praxis*. However, compatible with the sociocultural and spiritual roots of liberatory pedagogy, the use of philosophical foundations that are implicitly, if not explicitly, indifferent to empirical and structural realities necessitates the kinds of critical pedagogical, feminist and intersectional interventions I’ve outlined, in order to reflect more accountable and grounded research priorities than the conceptualizations of yet another aesthetic or philosophical *turn*. As with all turns there is a distancing move (Bourdieu & Passeron, 1977) that simultaneously de-legitimizes, or “periodizes” (Jameson, 1981), earlier perspectives.

There is finally, as with learning, the crucial critical question of *who* gets to decide *what* is being transformed, or even if transformation has occurred. In education, empirical evidence of learning is not a positivist conspiracy against self-actualization but a means of establishing whether or not learners have equal access to the kinds of valued dispositions, knowledges, literacies, resources and supports required for competent and skilled forms of “production” (de Castell, 2015; Thumlert, de Castell & Jenson, 2015) in the real world.

As a qualitative researcher oriented to self-reflexivity in articulating my active role in shaping my research, I draw on theoretical perspectives that draw on emancipatory pedagogy (Ranciere, 1991) and transgressive educational praxis (hooks, 1994) that begin ‘from the margins’ (hooks, 1994) of dominant paradigms of knowing, doing and saying, that I have extended through extra social and “ecological” (Gibson, 2015; Ingold, 2011a) perspectives that intervene on social and anthropocentric determinism. At the same time, the nature of my study has pushed

me to the very limits of my assumed disciplinary commitments to identify a more “situated” (Haraway, 1988) relationship to scientific and other domains rather than self-selecting out.

When I began this study, I was a ‘beginner’ and ‘novice’ to domains such as perfumery, botany and sensory science. In keeping with my own lived experiences of outsidership, I have thus chosen theoretical foundations that help me to question and critique paradigms and perspectives that maintain the kinds of perceptual, epistemological and sensory hegemonies my work seeks to transcend.

Chapter Three: Methodology



Image 6. Notebooks, art paper and scented *mouillettes*.

Introduction

As I outlined in the introduction and in my theoretical foundations, smell is a complex and confusing topic for researchers in the social sciences and humanities made more challenging by disciplinary silos that render certain objects off-limits to those outside of a domain. Thus, when I initially conceptualized this study I often self-selected out of many directions that appeared to be the property of other disciplines. Instead, I focused on smell's missing status as a *communicative mode* within our still ocularcentric paradigms of information, communication, media, interaction design and education. This topic appeared relevant and consequential for communications, but also for education and interaction design, given the increasing emphasis on screen-based educational tools and platforms said to offer more multimodal learning (Kress, 2013). As Jewitt (2009) suggests, "traditional" communicative forms, such as print, are "no longer adequate" (Jewitt, 2009, p.3). Proponents of multimodality (Iyer & Luke, 2010; Jewitt & Kress, 2003; Kress, 2011; Kress & Selander, 2011; Lotherington & Jenson, 2011) argue that these new media make use of the *full range* of modes (i.e., visual, auditory, kinesthetic, tactile) people use to

communicate, reflecting Marshall McLuhan's (1995) foundational idea that technologies "extend" the senses. As I understood more about the differing orientations, understandings and paradigms of smell, (that are further complicated by its imprecise uses as a signifier), I became less convinced that this was really simply a problem of missing modes, but rather, which definition of smell would most likely be compatible with a semiotic paradigm of meaning-making. Furthermore, with multimodality being positioned as a solution (Jewitt, 2009) to (yet another) "crisis" of literacy (de Castell & Luke, 1986), I began to wonder, not only about how modes are "legitimized" (Bourdieu & Passeron, 1990) but more specifically, how they are constituted as modes and, especially, the idea of the modal "affordance." This seemed especially critical with a social-semantic paradigm that appears to neglect *extra*-social, or ecological, affordances of meaning, such as the properties, qualities and attributes of substances, ambiances or materials that are already communicating, in the form of volatile compounds (such as terpenes in plants) through forms of information that we wish to inscribe before we have come to know.

Building on theoretical foundations I discussed in the previous chapter, I now turn to the methodologies and interpretive strategies I used to identify a more grounded and ecological basis of modal affordances relative to the use of manufactured, processed and living aroma sources for inquiry and learning, *in context*. In order to engage questions of meaning through use (rather than genealogical meanings that are transmitted or inscribed through texts), I selected from "action-centric" (Fernaesus & Jonsson, 2008), sensory auto-ethnographic (Pink, 2009; 2015) and multimodal (Kress, 2009) approaches that attend to doing *as* knowing (de Castell, 2009) beyond texts. Given these refinements and refocusing of my thinking and aims and the evolution of a study from proposal to fieldwork, I will discuss the rationale for the redevelopment of my

original study design and my selection of methods, their limitations, and other challenges that necessitated the improvisation of my own methodology, which I call tangible inquiry.

Preliminary fieldwork and pilot research

With the goal of developing a site-specific study that was initially focused on “intersensory” and “situated” (McBride & Nolan, 2018) approaches to understanding and learning about smell in different ecological environments and context, I initially undertook a pilot study of sensory mapper Kate McLean’s smell mapping workshop in Marseille (McLean, 2015b) to explore practical, and also methodological considerations involved in documenting and communicating about smells in the environment. From this workshop, I observed “how participants made use of their whole bodies, including other material affordances such as architectural features, to access a perceived smell source” (McBride & Nolan, 2018). Through this experience, I became more aware of the practical dimensions of engaging with smells as an ecologically and socioculturally situated (Pink, 2011a; Pink & Leder Mackley, 2013) activity. This preliminary fieldwork contributed to reconceptualizing my initially perceptual and conceptual understandings of smell to engage with it as a *whole-body experience* (McBride & Nolan, 2018). This concern with the *practical* considerations of the body is especially compatible with some of the more structural interventions on phenomenology. For example, one needs to have physical access, and proximity to, odours before their detection or sensory processing are possible and there are many physical, structural, environmental and other factors, that can impede or enhance this activity. As I argue in my literature review, these kinds of ecological and structural factors are typically neglected in purely functional accounts of smell as a perceptual process. And this is why, I argue, scholars in the social sciences and humanities may

have also overdetermined the “lived experience” (van Manen, 1997) of smell at the expense of an understanding of some of the phenomena we’re so busy experiencing.

As I outline in my theoretical foundations, and will elaborate further, I depart from ontological / phenomenological (Merleau-Ponty, 2012) orientations towards sensory perception and meaning making to explore the practical contingencies involved in the activity of smelling, which is to deliberately “sniff” (Horowitz, 2016), with a focus on sensory and modal affordances of aroma materials (and observable sources within the environment) that are otherwise abstracted into affective and symbolic goods. While the physical and embodied dimensions of smelling became less central to my study, and indeed secondary to a documentation and analysis of the selection, use and modal properties of aroma materials for different purposes, this initial fieldwork nonetheless contributed to a better understanding of how the smell ‘experience’ is represented in the context of built and natural environments.

Researcher statement

In keeping with my status as a qualitative researcher in the social sciences making use of self-reflexive intersectional feminist theoretical foundations (Crenshaw, 1991; Haraway, 1988; hooks, 1994; Lather, 1996; Oakley, 2000; Smith, 1987; Visweswaran, 1995), my deliberate choice of auto-ethnographic and ethnographic approaches acknowledges my active role in subjectively shaping my research. As such, I do not make any appeal to objectivity or claim there is a “truth” that resides in the data (Fairclough, 2001; van Dijk, 1993), but frame my findings, instead, as the product of active decisions I myself have made, which are also influenced by my own ideological, theoretical and lived standpoints. As I discussed in my research statement, and in keeping with the accountable and reflexive practices of social and, especially, feminist, research, I continually attempt to bracket off my initial knowledge, beliefs and understandings of

smell and aroma as an outsider, against the scientific, cultural or professional knowledge I later *acquired* as a researcher with privileged access to received discourse, subject matter experts and practitioners that a typical visitor to Grasse would not have access to.

Site selection

Although my research was initially conceptualized and proposed as a “cross-cultural” sensory-ethnography (Pink, 2004) of situated practices involving smell, my study evolved to focus on the aroma sources and materials with less emphasis on socio-culturally or regionally specific knowledges or practices. As I have discussed in my theoretical perspectives, this redevelopment was also intended to avoid reproducing forms of cultural relativism and essentialism associated with more traditional approaches to sensory culture whereby people and places are defined in relation to “monolithic” cultural, social or sensory orders (Pink, 2004, p. 13). Drawing on these interventions of cultural essentialism associated with the *anthropology of the senses* (Classen, 1997) perspective, my chosen sensory ethnographic methodology helps to contest, rather than affirm, essentializing, universalist or monolithic cultural, social and sensory orders that define people and places according to geographical and cultural categories.

Apart from Grasse’s significance as a definitive site of aroma culture and the cultural and historical value of the *Musée International de la Parfumerie*, I chose these sites for their proliferation of scent-themed features and ecologies that afford direct access to and interaction with aroma sources and materials. As I will detail in the limitations section of my conclusion, an overly ambitious initial range of sites, which included participation in perfume workshops and visits to flower farms, manufacturing facilities and perfumer’s ateliers, proved unwieldy and unproductive due to restrictions of my use of audiovisual media and the especially secretive and proprietary nature of fragrance in the commercial context. Thus, these changes in the focus and

scope of my study also shifted the design of my research from case studies to more thematic and site-specific chapters presented in a series of multimodal vignettes and tangible inquiries, which I will discuss further below.

Issues of access

Prior to my fieldwork, I established contacts with the museum (MIP) and other sites I was interested in visiting. Based on my initial communications with these sites, I was able to secure permissions, including a formal letter from museum securing permission. I specified from my earliest communications to these contacts that my study would be focused on the museum's sent-themed exhibits with a focus on the use and selection of aroma resources and their integration into the museum's programming. While I was successful in obtaining access to a number of other sites in Grasse, each of which I was able to visit, my ability to conduct research at these sites was often restricted to forms of documentation, such as verbal interviews *about* subject matter, rather than the more directly grounded, multimodal and experiential documentation of activities, environments and materials that were my primary research objects. In my conclusion, I will discuss further some of the consequences and implications of the politics of commercial fragrance that necessarily preclude and discourage the kinds of inquiries, of source and provenance, that I was most interested in finding out.

Language

As a beginner French language speaker language, although at times a challenge, was not a significant barrier for this study for several reasons. First, as a study explicitly focused on aroma materials, sources and ecologies rather than their representation, I was largely concerned with situating the aroma materials rather than a study of experiences or feelings about them. Secondly, I was aware very early in my correspondence with the MIP that the museum's most

senior staff and guides were fluent in several languages and that the museum was host to many English-speaking researchers and industry tours. Finally, as a study that explicitly critiques *acquired* and text-bound knowledge, and drawing on theoretical perspectives such as Ranciere (1991), one of my early aims in this study was to understand how much one could learn about these expert domains without *already* knowing how to speak its specialist or applied language.

Methodologies and study design

My operational methodologies draw on grounded (Dey, 2004; Goulding, 1998) qualitative social research foundations (Neuman, 2009; Strauss & Corbin, 1990; Cresswell, 2013; Seale, 2010; Winston, 1999) and newer, more action-centric (Dicks, 2013; Dourish, 2004) sensory ethnographic (Pink, 2009, 2015) and audiovisual (Pink, 2009; Stanczak, 2007) approaches analyzed through multimodal (Jewitt, 2009; Kress, 2013) interpretive strategies. This design attends to encounters involving *both* sensorially and physically embodied encounters with materials, ecologies and non-human entities, such as plants, ambiances and aroma materials and sources, that exceed more traditional modes of representation that involve primarily linguistic units of analysis. Pink's sensory ethnography (2009; 2015) attends to the embodied and experiential modes of action, experience and communication (Dicks, 2013; Pink, 2009), that involve "situated practices of doing rather than saying" (Pink, 2009, p. 84) in which researchers and participants "use their whole bodies and senses to touch, show, smell, and verbalize what is important to them about the environment they make and inhabit" (Pink 2009, p. 110). Pink's approach is applicable to researching the more idiosyncratic nature of sensory experience (p. 15) that varies between individuals. Echoing Ingold (2011a), Pink often situates her approaches against those of traditional ethnography that involve "recollective" accounts of encounters where meaning is primarily constructed *after* the fact.

My own approach differs somewhat with those of Pink and Ingold in that I do not situate meaning-making as a mind/body or culture/nature dualism, but seek to integrate my analysis of *in-situ* activity with reflexive analysis to make connections and ask questions. In this sense, meaning is not constituted as a singular truth that resides in either representational knowledges or embodied experiences, but as dynamic and structurally *accountable* whole.

Sensory (auto-)ethnography

Pink's (2009) useful and reflexive recommendation that "the sensory ethnographer starts with a kind of auto-ethnography of her or his own sensory culture and how she or he is situated in it" (Pink, 2009, p. 52) is reflected in my use of auto-ethnography as a means of accounting for the influence of my own sensory subjectivity (McBride & Nolan, 2018) on the encounters I describe. For example, in her case study of laundry practices in the United Kingdom, Pink notes how her informant's practices were often akin to the "practices of [actors on] television laundry commercials" (Pink, 2005, p. 281), highlighting the influence of *representations* of laundry practices in media that implicitly train consumers to use the kinds of sensory evaluation techniques that attend to features of the product (such as fragrance) they wish to emphasize. At a multimodal level, the idea that something is, for example, squeaky clean signifies the effectiveness of a shampoo as an auditory cue. While my study was not oriented specifically to recording *practices*, I made use of this strategy as a means of reflecting on my preconceptions about the location and context of my research in order to reflexively account for their influence on my study design and the analysis of my data. As an approach, Pink's sensory ethnography provided useful considerations for researching embodied and inter-subjective experiences, such as a vignette (see Chapter Four) where myself and a key observer share an experience of smelling synthetic scents through a designed interface. At several points in my study I am

undertaking the same activity as the participant in order to inter-subjectively contrast their descriptions and responses with my own using stills from my video recording of our experiences with a focus on describing the interface, the context in which it was situated and the specific actions and interactions that were involved in smelling from a smell machine, which included our responses to the smells they emitted. Together, we assess the fidelity of the synthetic scents against our own prior experiences of a given source (i.e., synthesized apple against the apples we have smelled in the past). My approaches here differ significantly with the scientific analysis of sensory evaluation techniques (Parr, 2002) that are drawn from perceptual paradigms drawn from psychology. While the first part of my dissertation is focused on these more inter-subjective and embodied dimensions of sensory perception in order to illustrate how sensory experiences are typically constituted, the rest of the vignettes in my dissertation redirect to the properties, qualities and contingencies of aroma sources and materials, rather than their experiential or affective *effects*. I deployed these strategies as a means of establishing a contrast between dominant approaches to smell and sensory interactions and those I developed in and for the study.

Methods

1. Recruiting

Given the aims and scope of this research project and its emphasis on the multimodal affordances and uses of aroma materials (rather than a survey of their experiential, aesthetic or affective *meanings*) my decision to focus on “key observers” (i.e., museum guides and gardeners) rather than a “representative” *groups* of participants (i.e., the public) is based on Glaser and Strauss’s (2004) “theoretical sampling,” which is intended to generate theory rather than establishing verification of generalizable facts (Glaser & Strauss, 1967, p. 226). Theoretical sampling can also contribute to snowball sampling of additional participants by establishing

“what groups or subgroups does one turn to next in data collection?” (Glaser & Strauss, 1967, p. 227), which, however useful in the early stages of planning my study, shifted away from ‘groups’ of people to specific individuals in situated contexts. Based on an existing network of contacts I made during my preliminary fieldwork to various sites in Grasse, I established my first contacts at the Musée *Internationale de la Parfumerie* well in advance of the submission of my research ethics and was able to include a formal letter of permission from the museum director to conduct my research with the museum’s staff. I made use of a “snowball” (Noy, 2008) technique to recruit additional participants and key observers using the informed consent form I designed for this purpose. My selection criteria included fluency in English to assure their comprehension of the ethical consent form and the nature of the study. This study makes no claim of generalizable truths about olfactory pedagogy but instead, serves as a departure for further inquiry about dispositions, identities and practices of olfactory learning as an unexamined area of research.

2. Data collection

Data collection for this study took place from April 7th to April 28th, 2016, which included references to prior visits to the museum during my preliminary fieldwork in Provence in June of 2015. This included digital video, still images, sound files, written and graphic/visual notes along with the acquisition of other material artifacts, such as physical aroma materials (i.e., fragrances, orris root, orris concrete, May rose water) and also print materials such as the formulas for the perfumes I made in Grasse, which I have included in an appendix. In general, my recorded shadowings of the cultural mediators in the museum and the gardeners ranged between 15 minutes and one hour. I first conducted background audio interview asking questions about the background, experiences and work of members of the museum staff from the museum director and curators to the mediation staff, archivists and the gardeners at the MIP’s gardens. I

also asked questions about their view of the significance or meaning of smell in their lives and how they have come to know things about aroma culture through the course of their work in the museum. Data was collected at the MIP, a local nursing home and the MIP's gardens, JMIP, in nearby Mouans Sartoux. In the case of data collection involving participant observation and interviews, recruiting was arranged on-site in accordance with the schedules of the personnel whose work I shadowed. Throughout her work, Pink (2004; 2005; 2009) emphasizes the use of audio-visual media to record these more multimodal (Kress, 2013) and site-specific encounters involving practices with phenomena or materials that need to be handled or observed was a useful intervention of traditional qualitative designs that privilege words over non-dominant modes of communicating, which was especially the case for the highly situated and sensorially rich environments I was researching.

3. Inter-subjective, action-focused participant shadowing

Sarah Pink (2005) states that her methodology of sensory ethnography is “absolutely not a technique of data collection” (p. 5), reflecting a fundamentally phenomenological orientation to research as a mode of lived transformation rather than documentation (Ingold, 2011a). She nevertheless emphasizes the use of video and other media to record embodied activities and practices within situated environments with particular objects and materials as an intervention of traditional face-to-face interviewing, which she suggests privileges words over other representations of experience. Drawing on Pink's strategy of the video tour which she describes as “a collaborative research method” (Pink, 2005, p. 276) whereby participants demonstrate ecologically situated sensory practices with the objects, ambiances and materials within their environment, I similarly focused on the recording of intersubjective activities that situated utterances into ecological and physical context. This approach was especially well suited to

researching encounters situated in environments, such as the gardens and museum, where learning, knowing and communicating involved embodied and multimodal action and interaction.

Whereas my own use of photos, videos or audio is not intended to capture an essential truth or claims about the phenomena, people or experiences I recorded, I do, nonetheless, consider these practices of *data collection*, whereby these recordings provide a means to describe and analyse ecological, inter-sensory and intersubjective dimensions of environments or ecologies involving specific substances, sources or materials rather their recollective interpretations. For example, I used video to record a shared sensory experience in which I was interacting with the same aroma source, or operating a device (i.e., smell machines) as a participant. Primarily, I used these strategies to understand how participants in my study, such as the guides at the MIP, made use of the materials, ambiances, designed affordances and scent-themed resources to mediate aroma culture and history by taking part in the inter-subjective activity of shadowing them in their work and engaging with the same materials that were used in these mediations with the public.

Given that inter-subjective collaboration is central to both the mediation practices I documented at the MIP and Pink's (2009) model of sensory ethnography, this active and interactive approach served to help me frame dimensions of the experience that are not typically represented in other social research methods, such as the tactile qualities of materials, smells, sounds, light, and so forth. While some ambiances I documented, such as the many sound files I recorded, exceed the scope of this study, I feel they helped me to focus my attention to the varied ambiances that flashed the ecological affordances of many of the materials I was researching to offer a more faithful to a more multimodal encounter with data.

4. Interpretative strategies

As I have outlined in my theoretical foundations and discussion of selected methods, I chose interpretative and analytic strategies, such as multimodal discourse analysis (Jewitt, 2009) and also, to a lesser degree, *critical discourse analysis* (Fairclough, 2001, 1993), that contribute to a more critical and structural analysis of the data as opposed to the “poeticizing” of ‘experience’ that is common to phenomenological orientations (Serres, 2008; Van Manen, 1997) such as Pink’s. Sensory ethnography is not concerned with decoding or interpreting the semiotic meaning of particular embodiments or gestures, but rather, understanding how participants make use of the sensorial affordances of objects, environments and activities for particular purposes. However, as I became more invested in understanding the structural and multimodal dimensions of my research I realized I needed to improvise further approaches, especially in relation to documenting the properties or qualities of aroma materials, substances or ambiances (rather than their effects). This also included tools or equipment along with environmental ambiances, such as heat and sunlight. Early on, when my study was more focused on sensory ‘experiences’ *with* volatilized odours, rather than the properties of, or structural and ecological contingencies of odour sources in use, I looked to multimodal analysis as a means of accounting for non-linguistic forms of information and communication.

Among the “core concepts” of multimodality (Jewitt, 2009, p. 14) is the “modal affordance” (Jewitt, 2009, p. 24), which plays an important role in defining what counts as a mode. Kress (2009) suggests that modal affordances are “socially shaped and culturally given resource[s], for meaning making” (Kress, 2009, p. 54). According to Kress (2009), the social meaning of mode is that which is shared and shaped within a community or group (p. 59),

whereas social semiotic meanings have formal “requirements” that serve consistent ideational, interpersonal, and textual functions.

For my own purposes, I have recast the modal affordance in relation to their extra-social as well as ecological sources and contexts, so in the case of an aroma material this includes the tangible properties or qualities of that material as a form of information that can be communicated and received through our sense organs. Unlike the phenomenological approaches to smell that emphasize affect over questions of functional sensing, my approach to documenting affordances, instead, accounts for concrete physical attributes and their contingencies on the ecological contexts and environments in which they were encountered.

In the case of multimodal analysis, units of analysis require a different scheme than a text document, such as the framing or cropping of an image, the selection of clips or stills from a video or the selection of specific segments of an audio recording. For example, Flewitt (in Jewitt, 2009 p. 45) argues that with images, the unit can be the visual frame, or with video, a temporal unit of a second. Sound might follow a similar logic, isolating a part or focusing on a passage. In the case of aroma, the use of perfumery’s musical metaphors of *notes* is more problematic as they are organized into culturally-given and essentialist, Eurocentric classifications of aroma into conceptual ‘families.’ Yet before it is possible to express things with aroma materials in a composition, it is important to understand what the materials *are*, how they *behave*, and their *properties* and *qualities*. For my purposes, I needed to establish a modal orientation that was not so much about translating aroma into social semiotic signifiers than understanding them as a media with specific properties or qualities that are generated by use and context and use rather than acquired inscriptions. My orientation thus accounts for the properties and qualities of modal affordances of aroma materials and scent-themed resources, both synthetic and natural raw

materials, constituted by ecological and sociocultural context and use by MIP guides in tours and workshops, along with the environmental, and structural contingencies, such as the design of built or ecological features of different sites, that afford smelling and interacting with these materials.

5. Other interpretive strategies

Throughout my doctorate, I have used critical discourse analysis (CDA) (Fairclough, 2001, Gee, 2013) decoding ideological interests and power relations (Foucault, 1980) that are embedded, and often concealed, in the discursive representation, or “texturing,” of particular perspectives, practices, beliefs or identities. As a researcher whose theoretical standpoint is informed by perspectives from critical pedagogy, intersectional feminist theory and other structurally reflexive approaches to questions of equity, diversity and inclusion, CDA has helped me illuminate “whose interests are represented, helped, or harmed” (Gee, 2013, p. 204). From an educational standpoint, this kind of analysis reflects attempts to unhide the “hidden curricula” (Jackson, 1968; Eisner, 1991; McBride & Nolan, 2018) of unacknowledged values, beliefs, assumptions that inform the politics and power structures of different domains of knowledge and practice. For my purposes, CDA was most useful as a more supplementary interpretive strategy, to help draw attention to views, beliefs and assumptions within specialist semiotic domains, such as perfume or wine, that are often highly coded. I have attempted where possible to show the validity of my own interpretation by providing instances of agreement, convergence and linguistic detail (Gee, 2011) between myself and other scholars or practitioners who have undertaken studies of similar subject matter. In keeping with more socioculturally situated models of qualitative validity (Lather, 1995), I triangulated my data through a comparative, inter-

subjective analysis between my own sensory autoethnographic field notes and data I have collected from participants, including reflexive accounts from follow-up interviews.

6. *Units of analysis*

My units of analysis are drawn from over a month's worth of daily data collection that occurred primarily on weekdays, with a dated folder assigned for each day's data collection by date. Given that I am not using enumerative or statistic measurements, I grouped these hundreds of items according to their *thematic*, rather than statistical, relevance, to my research questions. Given that much of my data collection involved my own *active* participation in the activities, shadowing the museum guides and gardeners in their work, my data largely consists of photos videos and sound files, notebooks and digital texts, such as emailed follow up interviews, intended to *frame* (Jewitt, 2009), rather than *capture*, ecological, environmental and sensory experiences. Each of the selected units reflects a facet of my research questions and stated aims (as outlined in my introduction), but also includes examples that disrupted or challenged my prior assumptions in unexpected or salient ways. Given my stated orientation to understanding the *tangible* dimensions of aroma materials *in context*, participant observation was limited to the MIP guides and gardeners and my own intersubjective participation in their tours and workshops rather than the documentation of their behavioural or affective or experiential 'meanings' to visitors. Finally, I do not include the aroma inquiry prompts as units of analysis as they are intended as multimodal resources or 'volatile citations' to communicate dimensions of phenomena that are otherwise reduced to subjective narrative rather than an intersubjective or empirical engagement with qualities or properties.

7. Open coding

I used an open-coding model for data analysis, which contributes to an “iterative” development of concepts or themes that can be “tested” (Strauss & Corbin, 1990) *between* each research encounter and refined through remaining fieldwork. This includes my explicit contrast between the vignettes in the first and second chapters and also their juxtaposition with concrete physical sources. This included a number of tangible and volatile materials such as liquid aroma materials, pressed plants and flowers and material culture objects, such as scent strips, from my research sites. After a review of all of the collected materials, I then grouped and named the data using key research encounters (named for the aroma material, location, interaction type or key observer), which I then began to code for themes or clusters that appeared to speak to specific aspects of my research questions. From these clusters, I selected units of analysis, such as temporal segments of audio, still frames from video or image crops, hand-written notes or aromatic materials. I then selected salient moments and details for closer analysis.

8. Presentation of findings

In my initial conceptualization of this study, I had proposed a case study design. Given the many developments and shifts in my focus described above, I discovered that this was an unsuitable format for my findings. Instead, and following the rationale for my methodological choices and interventions, my findings are presented as site-specific inquiries and narrative vignettes of highly situated encounters involving aroma with a focus on the rationale for their selection and use as resources for scent-themed interactions and mediations of environments and objects. These findings emphasize practical and applied dimensions of understanding and working with aroma materials and sources. These inquiries and narrative vignettes are interspersed with Aroma Inquiry Prompts to focus on the ecological affordances of aroma

sources and materials in the MIP and JMIP. These inquiries work together to articulate an ecologically situated, inquiry-based model for exploring the tangible *properties* and *sources* of aromas and aroma materials that moves beyond the predominantly perceptual paradigms of smell that reduce aromas to their affective or semiotic effects.

Smell this data: The Tangible inquiry box

As I discuss in my introduction, for my immediate committee and dissertation defense I created a small collection of physical materials that I encountered in my research and discuss in the dissertation in order to supplement my findings and make arguments about how and why to put down the text and share knowledge and knowing *beyond the word*. Such a tangible and multimodal format works to transgress the limitations of the traditionally *text bound* dissertation formats, to engage my committee (along with readers) quite directly in a multimodal dialogue into questions about the facticity of what is counted, or constituted as, data, information, document (Gitelman, 2006) or communication. These prompts provide an opportunity to contrast and calibrate (Robinson, 2000) your own sensory observations with those of myself and the participants in my study, thus supplying a more physical and experiential grasp of my examples that invokes prior feminist reconceptualisations of traditionally regressive, positivistic or textbound notions of validity (Lather, 1995). Through my inclusion of these volatile and tangible materials, that can be seen, touched and smelled, I have extended this dissertation, along with ideas about what kinds of document might, in future, be included in a scholarly review. Extending this work, I also include a DIY ‘How To’ instruction for the Aroma Inquiry kit in the appendix, for readers who wish to assemble their own (including a list of online sources for some of the harder to find materials included).

Departures and redirections

My initial selection of Pink's sensory ethnography (2009), which closely and faithfully extends theoretical perspectives articulated in the work of Ingold (1992, 2011a, 2011b, 2013), reflects my structural concern with the environmental and ecological "contingencies" that afford *sensory experiences*. However, while there are some references to Gibson's (2015) ecological theory of perception, they appear to convey his ideas more in theory than in practice. By and large, this methodology, as with Ingold's perspectives, is far more strongly influenced by phenomenological and post-structural theorizings of embodiments, experience and phenomena, independent of empirical and functional 'contingencies' that are specific to the chemical senses. As I discussed in my theoretical foundations, some of the central tenets of sensory ethnography are underwritten by theoretical and perceptual paradigms that are largely incompatible with my project. Despite the value of a methodology explicitly oriented to "doing rather than saying" Pink's densely theorized *Doing Sensory Ethnography* (2009; 2015), fails to scaffold practical, on-the-ground alternatives to the methodological approaches and "techniques" (data collection) (Pink, 2009, p. 5) it disavows. Furthermore, the rejection of data proves incompatible with the kinds of grounded research projects that require standardized ethical research protocols, more common to fields like education that are defined by social commitments and accountabilities, rather than ontological sophistication.

While the more recent edition of Pink's *Doing Sensory Ethnography* (2015) signals an awareness of practical shortcomings, her endorsement of the interconnected view of the senses, draws on popular claims of sensory neuroscience that are widely contested with in the fields of neuroscience and psychology. And yet this is also a paradoxical agreement between the anthropology of the senses (Howes, 1991; Classen, 1997) and sensory anthropology (Pink, 2011;

Ingold, 2011b) in their rejection of functional or applied scientific understandings of the senses, which is problematic in the case of the chemical senses. However, as Classen, Howes and Synnott (1994) argue in their introduction to their *Aroma: the cultural history of smell*, “our singling out of scent for attention serves to redress this long-standing imbalance” (p. 9), which reflects an awareness of the necessity of strategic essentialism in the face of abstraction and periodization.

A methodological intervention: Introducing tangible inquiry

As I discuss in my theoretical foundations, an apparent limitation with multimodal analysis is that it draws on an almost entirely social-semiotic basis of “meaning potential” (Jewitt, 2009) that imposes an acquired knowledge of “what something *is* rather than what *it* does” (Ingold, 2013, p. 29). While the framing of meaning through use is valuable in my study, I also discovered limitations in the social semiotic framing of modes that are independent of a consideration of organic or volatile phenomena as sources of information that *already* communicate their properties, behaviours and qualities relative to the environments in which they are constituted. For example, to assess the hue and clarity of a wine requires a good source of light (Robinson, 2000) to be properly assessed and thus practices of sensory evaluation are not just about perceptual or cognitive skills of perception but also an awareness and skilled use of ecological affordances, such as light, quite apart from the techniques of imposing acquired semantic schemes onto sensory percepts.

As my research developed and focused more specifically on the extra social and ecological, rather than scientific or social semantic, affordances of aroma materials, I found that I had to improvise my own method, which I call ‘tangible inquiry,’ as a practical and applied means of accounting for such physical phenomena and environmental ambiances that have

substance and form that exist independent of their translations into subjective experiential sensations (Gibson, 2015). As I have mentioned in my theoretical foundations and literature review, my need for another methodological approach was motivated by an ecological gap in the theorization and research of ‘sensory’ topics that either focus on representations or else perceptual or experiential effects independent of sources of ‘stimuli.’ For example, Pink’s (2012) “multisensory engagements of the practice of gardening” (Pink, 2012, p. 94), emphasizes the *affective* and embodied dimensions of experiencing the garden with a focus on a phenomenological and intersubjective account of the researcher’s movement through the garden with the gardener. However, in my account of a walking tour of the JMIP gardens in Grasse, the gardener continually drew my attention to specific plants, focusing our ‘sensory’ attention on the observable characteristics and properties of the plants and the biodiverse affordances of the environment, rather the ways our subjectivities or bodies contributed to forging a sensory *pathway*. Instead, I largely focused on the documentation of the properties and qualities of the entities, substances and ambiances that the gardener wished to emphasize. As I also discuss in the dissertation, my ecological orientation to the modal affordance suggests, the plants are already ‘communicating’ (through chemical and other forms of signal) independent of their translations into sensory stimuli or narrative. If we are to, as Ingold (2013) suggests think through making, then this necessarily begins with a more grounded process of inquiry into how and what those materials communicate prior to their meanings through use.

My use of the term inquiry references foundational educational paradigms of “inquiry-based learning” (Eisner, 1991; Ministry of Education, 2013) that de-emphasize institutional paradigms of schooling as a process of transmission of acquired knowledges to focus, instead on the ecological, and extra-social, dimensions of inquiry as a form of “informal learning” (De

Castell & Jenson, 2010; Jonassen, 1999; Williams, 1993). As such, my attention to the concrete and material properties and affordances of aroma sources and materials (both living and processed) is quite different from a sensory ethnographic approach, which is more explicitly oriented to the phenomenological dimensions of perception. Finally, this is not to suggest my approach is somehow outside of subjectivity, but to intervene on its *over-determination*, particularly when the affective comes to obscure the dimensions of phenomena that are associated with 'scientific' classification or methods of inquiry.

Chapter Four: Mediating aroma

Smell prompts: ‘Fragonard showroom,’ *Fleur d’Oranger/Neroli*, vetiver oil, synthetic jasmine, jasmine absolute, *4711*, Fragonard Iris, orris concrete and raw orris root



Image 7. Aroma learning resources, MIP atelier.

Introduction

As I note in my introduction, while Grasse is often discursively produced as the “world capital of perfumery” (Rosati-Marzetti, 2013; 2015), this status is often framed in the past-tense, particularly in the accounts of perfumer writers (Turin & Sanchez, 2009) that ignore or undermine the town’s commercial, agricultural and cultural *present*. Unlike the commercial bus tours that whisk tourists through the ‘Big Three’ fragrance showrooms (Fragonard, Galimard and Molinard⁵) to buy scented soaps and fragrance souvenirs, the job of the government-qualified

⁵ Three commercial perfume factory-showrooms in Grasse where I undertook beginner perfumery workshops available for tourists, which I will discuss in the postscript.

“mediators” (Caillet, 1995; Caune, 1999a, b) who work in the museums and historical institutions is to, as they often put it, “educate, not sell” (CS interview). Thus, historical institutions such as the *Musée International de la Parfumerie* (MIP) play a different role in establishing culture as a *living* heritage that is constituted, in part, by the “lived experiences” (van Manen, 1997) of inhabitants as well as the many visitors who annually travel to Grasse to for *seasonal* celebrations, such as the rose expo and jasmine festivals. In the case of the full-time mediators from the MIP who participated in this study, I noted how their commitment to education, rather than consumption, is reflected in their commitments to the socioculturally inclusive and reflexive practices of *médiation culturelle*’ (Dufrêne & Gellereau, 2013; Rouze, 2010; Caune, 1999; 2000; Caillet, 1995; La Médiation Culturelle, n.d.). While MIP’s mediators to not adhere rigidly to *médiation culturelle* as a formula or roadmap for their programming, it does inform their shared goals to forging links between the museum and the experiences and identities of visitors and the community. For the purposes of this study, I was interested in understanding how these dispositions, practices and priorities influence the selection and use of aroma materials and olfactory media, such as smell machines, as multisensory and multimodal resources to both communicate and make connections.

This chapter examines uses of aroma and aroma materials as a resource in the cultural mediation practices of the MIP’s mediators that I documented over the month of April 2016. While my overall research within the built environment of the *Musée International de la Parfumerie* (MIP)⁶ was largely oriented to an investigation of the MIP’s unique built and botanical “scented-themed” features (Henshaw, 2013) (as opposed to its environmental ‘smellscapes’ more broadly), this chapter also attends to practical considerations involved in the use of aroma as a multimodal resource for understanding, experiencing and communicating

⁶ MIP promotional video <https://www.youtube.com/watch?v=Mt1g-7brCtA>

culture. However thematically situated by the history and culture of perfume or educating in the museum context, this chapter is not intended to contribute to the analysis of perfume history or museological practice, but, rather, an “action-centric” (Fernaesus, Tholander & Jonsson, 2008) and participatory examination of socioculturally situated encounters involving scent-themed interactions and aroma in the mediation of cultural artifacts. As such, meaning is not framed as a property of a text or expert discourse, but as the outcome of dynamic, responsive and reciprocal interactions between people, ecologies and materials.

Drawing on research questions outlined in the introduction, this chapter examines three central questions: 1) How do the MIP mediators *select* and *use* aroma materials with diverse persons or groups (some of whom may not have an interest in this topic)? 2) How is aroma *integrated* within the museum more generally, and what *kinds* of materials are used for mediation practices and within the scent themed interactions? And; 3) How do these situated contexts and uses of aroma resources reconfigure smell as a tangible and multimodal (Jewitt, 2009) resource for varied purposes (beyond the context of ‘perfume’)?

My findings are presented in three parts through thematic multimodal narrative vignettes. *Part one* backgrounds the MIPs orientations to the philosophy of *médiation culturelle* leading into an examination of intersubjective activities and interactions that involve aroma as a resource for mediation practices with a focus on the selection and use of the materials. *Part two* examines aroma as a mode of volatile communication in scent-themed interactions, with a focus on the qualities and differences between synthetic and botanical aroma materials as a purely olfactory experience. *Part three* concludes the chapter with a single extended vignette in which I shadowed a senior mediator in his preparation and undertaking of a “memory” workshop (LP interview) at a local nursing home in Grasse, with an analysis of the materials and how they were

used. While these collected vignettes reference specific guides at the MIP, my analysis is not *about* these individuals but rather of the particular properties, qualities and affordances of the aroma materials, objects and environments that were scaffolded *with* and through them.

‘Smell Prompts’

As outlined in my introduction, this chapter features a series of volatile citations I call ‘Smell Prompts’ that provide opportunities for the reader to directly engage with some of the scents discussed in the dissertation. Through these prompts, you may contrast your own responses with those I have described, to offer an olfactory, and occasionally, tangible grasp of the sensory and multimodal affordances of these aroma sources and materials for the purposes I have described through a deliberate consideration of their properties, attributes and qualities along with the ecological contingencies, and also structural and sociocultural factors that afforded their perception. As I have explained in the Aroma Inquiry ‘How To’ overview [before the introduction], these prompts are not themselves units of analysis, but rather, volatile or modal citations intended to support aroma qualities that are otherwise limited to words. These citations are also a methodological intervention of shortcomings associated with *auto*-ethnography (Visweswaran, 1995) and overly subjective accounts of sensory phenomena, in this case aroma sources and materials, that cannot be recorded or represented with the same fidelity as visual or audiovisual data.

Featured units of analysis include images, still frames from digital video and transcriptions of brief segments of audio drawn from contextually significant interactions involving inter-subjective and auto-ethnographic accounts of encounters with aroma resources and scent-themed interactions through a multimodal-analytic interpretative strategy I have discussed in the methods chapter. Data collection for this chapter took place in early April 2016,

with references to earlier visits during my preliminary fieldwork in June of 2015. I undertook the data collection for this chapter primarily at the museum, including a brief visit to a local nursing home⁷ in Grasse. The chapter closes with a general discussion of my findings and their implications for accessible, inclusive and practical approaches to using aroma as a multimodal resource.

Part I: Grasping aroma history

This first section is focused on the aromas, ambiances and materials that initially caught my attention when I first visited Grasse and the MIP in the summer of 2015, and that were subsequently reintroduced to me in 2016, in the course of my documentation and data collection with the museum's mediators during museum tours and workshops. This section highlights smell as a multimodal intervention of traditionally "look but don't touch" (Harley, et al., 2016) museum display paradigms that moves, as Fernaeus, Tholander and Jonsson (2008) put it, "beyond representations (Fernaeus, Tholander and Jonsson, 2008, p. 249)" to engage visitors to the MIP in "action-centric," rather than "information-centric," and often tangible interactions involving aroma. Where relevant, I will bracket off my initial assumptions, presumed knowledge and beliefs about aroma culture as a relative outsider against the cultural knowledge I later acquired as a researcher with privileged access to texts, subject matter experts, scholars and practitioners than a typical visitor to Grasse.

While not central to this chapter, some of the practices I have referenced in my discussion of mediation are based on the foundational perspectives of Jean Caune (2000) and Élisabeth Caillet's (1995) *médiation culturelle*. Throughout my interviews, the mediators emphasized how

⁷ I have anonymized details about the nursing home location and resident's identities for the purposes of privacy.

their approaches work to encourage visitors to make connections between the collection and their own sociocultural and lived experiences.

As my interviews with the MIP mediators suggest, these kinds of practices are intended to generate socio-emotional rapport in contrast with the lecture style of conveying matter expertise that is common to more traditional museological approaches. That said, the mediators at the MIP were both current and highly knowledgeable not only about history and culture, but also of the botanical, scientific, aesthetic, psychological and commercial dimensions of the aroma materials that are presented in this chapter. As the MIP's mediation team director Christine Saillard explained, individual mediators may have different educational backgrounds or skills, "but the goal is the same: create a link between people and objects" (CS interview). Unlike more traditional museums, MIP's approach about involving visitors in meaning-making. Unlike audio headset tours, which can function as a kind of canned lecture, mediators can be responsive to individual visitors' particular interests or questions (CS interview). Another mediator, Amelie, explained that this is about a disposition towards "listening" to the visitors, and reflexively observing their responses, rather than talking "at" them (AP interview). When I asked Amelie to explain this further, she said, "we must go step by step and be really aware and watching people and what they do. To pay attention to them, they have to feel comfortable. No right or wrong. Just talk... *freely*" (AP interview, emphasis mine). Throughout our interviews, mediators emphasized that their goal is to make people feel *comfortable* expressing their feelings or responses, rather than imposing a particular viewpoint.

Keeping these principles in mind, the following vignettes examine the inter-sensory affordances of aroma materials and scent-themed interactions, which include both synthetic and organic raw materials, as they were used by MIP mediators in their tours and workshops in the

museum. This first vignette backgrounds the philosophy of cultural mediation and how the mediators incorporate it into their approaches and practices.

‘Habit de mediator’ (The mediator’s outfit): A portable apothecary

When I first visited the *Musee International de la Parfumerie* (MIP) on a very hot day in mid-June 2015, it was almost by mistake, as the purpose of my trip to Grasse was to attend an intro perfumery workshop at Fragonard⁸ (Fragonard, n.d). Wedged between two buildings on the Boulevard Fragonard, I had no idea that this charming, almost comical, facade [see image 9] was part of a much large complex of buildings above it, as the main entrance of the MIP is around the corner on the *Boulevard du Jeu de Ballon*. Out of view, on the other side of the high wall next to the entrance is the MIP’s *orangerie* [orange tree garden] that is overlooked by the MIP’s rooftop botanical conservatory. And these were only three of the unique botanical features of the MIP, including the several acres of gardens in the nearby village of Mouans Sartoux.



Image 8. *Habit de parfumer* sculpture; Image 9. South entrance to MIP

⁸ The three perfume factories, Galimard, Fragonard and Molinard offer ‘beginner’ perfume workshops.

At street level, several potted, flowering orange trees (*Bigaradier*) caught my eye before their scent (the delicate orange blossom that is the source of ‘neroli’) arrived at my nose, due in part due to the perfumed breeze that carried the scents of the Fragonard perfume factory and showroom nearby, and also due to my physical proximity to the tree. This observation, of the fleeting nature of a “smellscape,” was informed by my research of Kate McLean’s smell mapping and walking workshop in Marseille (McLean, 2015).

Smell Prompt: Fragonard showroom⁹ and Neroli¹⁰

This smell prompt features the commercial fragrances of Fragonard and the delicate aroma of neroli, which is extracted from the *Bigardier*. It is intended to convey the striking contrast between these aromas and the intensity of the “smellscape” in this specific location.

Next to the flowering trees is the whimsical sculpture, “*Habit de parfumeur*” by artist Tomek Kawiak (1997). The sculpture is a three-dimensional version of 17th Century Parisian illustrator Nicolas de Larmessin’s allegorical ‘grotesques’ of tradespeople, ‘*Habits des métiers et professions*’ (dress of the professions), whose bodies are festooned with the tools and materials of their professions. This imaginary perfumer’s ‘*habit*’ (outfit) has shelves of bottles of perfumed waters, containers of pomades, pastilles, soaps, dyes and powders. In one hand, he holds out folds of leather, symbolizing the medieval relationship between perfume and the tanneries. On his head is a distillation alembic with steam pouring out. For the purposes of this first vignette, Kawiak’s sculpture, and the history behind it, is an apt visual metaphor for the materials-focused ‘habit’ of the MIP’s cultural mediators. Like the ‘*Habit de parfumeur*,’ the mediators are

⁹ ‘Fragonard showroom’ is a mixture of fragrances they demonstrate in their sales showroom.

¹⁰ Neroli essence is derived from the orange blossoms of the *Bigaradier*.

similarly equipped with the tools of their job held in a custom canvas carrying case, which is a kind of portable apothecary.

During my participation in the tours, I had the opportunity to retrieve the case for one of the mediators and found it quite lightweight. More practically, the case is used to transport resources used in museum tours, including tours in the MIP's gardens. The case has a long aluminum handlebar with end rings for a shoulder strap and a series of narrow pockets along the length of the case that hold bottles of liquid scent upright. There are two mesh pockets at the end with several handfuls of *mouillettes*, the paper strips used to share liquid scents during the tours. The main compartment is full of scent-themed resources such as laminated photos of aromatic materials, loose organic plant material and a large paper box of *mouillettes*.



Image 10. Carrying case interior; Image 11. Carrying case exterior
Exterior of carrying case mesh pocket with *mouillettes*.

I was first introduced to the contents of the carrying case when I accompanied the museum's most senior mediators, Laurent, in selecting from dried and loose organic aroma materials, such as tonka beans, oakmoss, frankincense, beaver glands and vetiver roots [Image

10 & 11] in the MIP's from the apothecary-like *Atelier* (classroom).¹¹ One of the first aroma sources visitors meet during the standard tour is the delicate, sculptural vetiver root [Image 12], which is shared with visitors during the introduction to the MIP's rooftop greenhouse (which I will describe in more detail in Chapter Five). The story of the vetiver in the greenhouse is a useful starting point for my discussion of the materials used in the mediations as it also marks the beginning of the museum tour that moves from the ecological to the more explicitly cultural.

In the following vignettes, I will use images and video transcripts as a sensory ethnographic (Pink, 2009) shadowing of my own participation in the guided public tour, along with notes from my own sensory ethnographic participation as my primary units of analysis. These will focus on just a few of the items found in the mediator's carrying case, such as vetiver, *mouillettes* (scent strips) and Frankincense resin. As I have outlined in my recruitment and participant statement in my methods chapter, the data I collected was focused on the mediators uses of aroma materials and not visitors to the museum. Throughout these encounters, I make use of multimodal analysis (Jewitt & Kress, 2003; Jewitt, 2009) as my primary interpretive strategy using units of analysis drawn from the photos and video along with a sensory auto-ethnographic documentation of my own experiential and sensory-ecological dimensions of materials, ambiances and ecologies that exceed traditional forms of documentation and representation.

¹¹ I will return to the *Atelier* in my postscript to discuss some of the many fascinating dimensions of Grasse and the MIP that exceeded what I was able to meaningfully document.

Tangible aroma material: Vetiver root



Image 12. Vetiver roots on atelier shelf; Image 13. Laurent demonstrates with vetiver root.

In Image 13, Laurent positions his body just behind the recently cropped vetiver grass (discussed in detail in Chapter 5), which he gestures to with a piece of vetiver roots that he holds aloft with its roots facing down. Laurent uses his gestures to make a visual connection between the living vetiver plant and its transformation into a dried raw aroma material (the vetiver roots), using his hands to specify and call attention to physical features of the materials, modeling¹² different ways to observe the visual and tactile “affordances” (Gibson, 2015) of the vetiver. As he does this, he scaffolds some acquired knowledge about vetiver, such as where it comes from, how it is processed and its social and cultural uses. Laurent explains that it is not the grass, but the roots, below the ground, from which the vetiver aroma essence is derived. Laurent uses his voice and facial expressions to enunciate and sound out the syllables of ‘RA-CINE’ (French for root), which often resulted in visitors saying the word aloud.

Over the course of my own participation in the museum tours and workshops, I often noted how the hardness and tactile qualities of botanical raw aroma materials such as vetiver root, even in the absence of an odour, made immediate sense of the museum’s strange looking

¹² I draw on my background as an educator here in the use of the term ‘modeling’ which refers to the embodied demonstration of physical gestures, techniques or processes needed for a task.

equipment and machinery used to extract plant essences through processes of maceration, solvent and heat distillation. Prior to touching or grasping these raw materials with my own hands or holding them close to my nose to smell, I had no *physical* link between historical processes of fragrance production, such as *enfleurage* or maceration, neither of which had compelled my interest prior to my experiences with the aroma materials.

As the dried vetiver root is passed around, visitors can touch and sniff at it. When it gets to me, I note its lightness, flexibility and surprising hardness. The dried vetiver roots have only a light scent, which serves as an olfactory reminder of the transformation raw materials must undergo to become perfumery materials. I noted how the automated misting of the plants and the interior humidity contributes to volatilizing (releasing) some of the aroma of the dried material. In Laurent's other hand are a bunch of scent strips (*mouillettes*), the tips dipped in vetiver oil, which he then passes around to the group to sniff.

Smell prompt: Vetiver oil

This smell prompt is intended to provide you with the opportunity to compare and contrast your own impressions of the aroma with those I share below in the text.

In his compendious overview of perfumery materials, Steffan Arctander (1960) describes the scent of vetiver oil as “sweet and very heavy woody-earth reminiscent of roots and wet soil, with a rich undertone of ‘precious wood’ notes” (Arctander, 1960, p. 396). Before the internet and websites like *Fragrantica*,¹³ where you can look up the notes in any commercial fragrance, most perfume culture enthusiasts might look to a book like Arctander's *Perfume and Flavor Materials of Natural Origin* as a primary source from which to calibrate their own impressions of aromas

¹³ <https://www.fragrantica.com/>

with those described by others. When I first began working with aroma materials I was very uncertain as to what certain things ought to smell like and searched in vain for others impressions of the same scent. Bracketing my lack of knowledge of perfumery when I arrived in Grasse, and the many things I have learned since, I make note that a source like Arctander, however valuable, is not something an ordinary reader would necessarily stumble upon without an intrinsic interest in perfume related websites or texts. I will return to these critical issues of insider/outsider access to acquired, and especially logocentric, knowledge in the final concluding chapter.

Analysis

Reflecting on this first ecologically-situated and tangible interaction with the physical and volatile properties and qualities of vetiver, in both living and semi-processed forms, I have shown multiple ways of directly *grasping context*, such as the nature of the material in its unprocessed form, that are not meaningfully conveyed through texts alone. This vignette highlights some of the differences between the tangible and physical interactions, in contrast with its contextualization in a domain-specific text. For many of us, the chance to smell or handle a piece of vetiver root, let alone see or touch the living plant, is a rare opportunity. As a ‘note’ in a fragrance composition, vetiver becomes an aesthetic signifier, as there is nothing to literally grasp more holistically about what vetiver *is* (i.e., a hardy root that was in the *earth* and that smells like wood and earth). Through direct and tangible, experiential, encounters with aroma materials, it is possible to develop an appreciation of an ecological context that is quite different from the marketing narratives of the perfumery industry. In the case of this multimedially mediated encounter with *raw* materials in semi-processed forms (such as the harvested dried vetiver), we have the opportunity to understand more about the source from and through the source.

Just as hands-free technological interfaces have been marketed through appeals to convenience and accessibility, so too has the modern fragrance industry alienated and decontextualized these more physical and ecological relations with aroma sources and materials. This is especially the case with essences in the ancient world (Aftel, 2002) such as oils, resins and balms, which had distinctly tangible and tactile qualities that involved their application, through the touch and caress, on skin.

The opportunity to explore and handle unprocessed materials, such as these dried vetiver roots, invites theory-building and meaning making as a ‘tangible’ inquiry into the kinds of questions that result from our own explorations and curiosities rather than what is deemed significant or important by a text—such as the possible uses of this material or the processes of extraction required to obtain its essence—that are obscured when these essences are integrated (or more accurately *synthesized*) into products. The opportunity to explore such a material directly is also an example of an “engaged” (hooks, 1994) and embodied “inter-sensory” pedagogy (McBride & Nolan, 2018) where it is the learner making sense of the material for herself rather than, what teachers refer to as the ‘sage-on-the-stage,’ or ‘show-and-tell’ notion of educating as an ‘expert’ transmission of *information*.

Tools of the trade: Introducing the mouillette (scent strip)



Image 14. Hanging sculpture of *mouillettes* at the MIP

One of the first things I noticed when I arrived inside the MIP is a giant hanging sculpture of the paper strips used in perfumery, that are humorously referred to as *mouillettes*^{14/15}. The ones used in the MIP are slightly different from those used in a department store, which can come in all shapes, sizes and materials, including even pieces of fabric. These ones come to a narrow pointed end, which is intended to fit into the sometimes very small orifices of concentrated essences [see image 16], such as those used on a perfumer's organ.¹⁶ In the context of the MIP, only a few of these, with a small amount of aroma material on the very end [see image 15] are required to share with a small tour, unlike their use in commercial showrooms, such as Fragonard, where sales staff can go through several *hundred* small booklets of smelling strips with a single bus tour.

¹⁴ In French, this means 'finger of bread,' referring to toasts dipped into soft-boiled egg.

¹⁵ *Mouillettes* are included in my Aroma Inquiry Kit but can be purchased online. See my source list at the end.

¹⁶ The perfumer's organ is a desk typically featuring shelves of perfumery materials.



Image 15. Laurent holding up *mouillettes*; Image 16. Dipping *mouillettes* into an aroma essence.

While the MIP is not the only museum to use *mouillettes*, their practices with them and the philosophies that inform these practices are very different from those of more traditional environments that make use of an expert lecture format. Recalling his visit to the Osmatheque perfume museum in Paris, fragrance writer Luca Turin (2006) recollects:

lectures given by retired perfumers, accompanied by the distribution of smelling strips to illustrate the points made in the talks. The smelling strips are dipped in little bottles and the little bottles are dilutions of the Big Bottles stored in a dark, airless, cold store in the basement. (p. 20)

While at the MIP, I had the chance to smell such a selection of Osmatheque smelling strips, from a staffer who had just returned and very generously offered them to me for my research. Having the opportunity to sniff these traditional fragrances did indeed convey the differences between contemporary and traditional perfume styles. However, in my worry that the strips might lose their scent before I returned home to Canada, I documented in my notebook the green and floral quality of ‘*Vert Vert*,’ which I later learned was created in 1947 by perfumer Germaine Cellier for Pierre Balmain. There was also a perfume with a *Lily of the Valley* that was

more mossy, citrusy and wet than Edmond Roudnitska's powdery *Diorissimo*. My notes for François Coty's classic 1905 perfume '*L'Origan*' include the words "peachy, spices, jammy, 'old fashioned'" which reflects the knowledge of perfume history, perfumers, perfumes and fragrance descriptors I acquired from my time in Grasse.

Amelie, a former children's arts teacher and current cultural mediator at the MIP, articulated a critical distinction between mediation and "lecturing," whereby, mediators at other museums can "see only the technical" aspects of what the MIP guides do, such as sharing mouillettes, and "only take a *part* of it: They think: 'oh that's easy, we just give them the smell and we all talk about our emotions!'" (AP interview). Amelie's incisive comments convey a consciousness about the institutional "routinization of pedagogic work" (Bourdieu & Passeron, 2000, p. 190), an example of critical reflexivity overlooked in previous studies involving the MIP (Rosati-Marzetti, 2013, 2015) that are situated by texts rather than *with* people. Amelie's awareness, of the differences between pedagogy and performativity (of expertise), is also reflected in her assertion that "mediation isn't sensory *entertainment*" (AP interview, emphasis mine). When I asked how she might elaborate further on differences between entertainment and learning, Amelie shared a perspective that is also foundational in early years educational paradigms of physical knowledge (Kamii, 1991) that I have similarly emphasized in my own work (McBride & Nolan, 2018):

The best way to teach kids anything, and a good way to connect with anything for adults too, [is] not only to address the information to visual and auditory memories but also kinesthetic, and a total experience is an intense experience! You live it, you remember it and even more: you discover and you understand it deeply. (AP interview)

Amelie's comments reflect the highly multimodal ways the mediators communicate with visitors through gesture and embodiments involving a range of facial expressions, hand gestures, and vocalizations, such as the 'shhhhhh' sound to multimodally signify processes of steam distillation while pointing to an antique distillation artifact in the museum. As a non-French speaker, such non-verbal cues were not only valuable for communicating with a wide group of tourists from many different places but also helpful to "scaffold" (Vygotsky, 1980) processes and procedures that are sometimes better understood through *action* and *interaction* than technical terms drawn from unfamiliar semiotic domains.

In fact, the mediators pay very close attention to the visitors, addressing themselves to each of the participants and finding ways to involve them individually. During one of the tours, a young boy wandered into the group while we were smelling the *mouillettes*. The mediator continued talking as he passed the child a *mouillette*, which the boy then sniffed at, following along with us for a short bit before returning to his parents. Unlike the rigid lecture style tours offered in the commercial perfumeries, such moments of random inclusion reflect the guides welcoming, flexible and easy going, rather than formal and impersonal, disposition.

Analysis

I suggest that the reports of these key observers, along with the activities I describe reflect an orientation towards meaning-making that is not the property of historical or scientific texts, or 'show and tell' lectures from not-at-all-neutral subject matter experts but an outcome of *active, participatory* interactions *with* and *between* (Pink, 2009) diverse visitors that involved more *doing* than *saying* (Pink, 2009; 2015) along with direct physical activity (Ferneaus, Tholander & Jonsson, 2008) with aroma materials and the sensory perceptions these practices and contexts *afford*. And while these materials have rich and significant histories, their mediation

at the MIP reflects a disposition focused on visitors as active *publics* engaged collaborating in defining the meanings of living heritage, rather than passive *audiences* held captive for preferred narratives.

It is also important to note that these interactions are not intended to simulate ‘immersive’ experiences to signify historical periods, as MIP mediation team lead Christine argues, “odours we use are neither there to *recreate* the olfactory environment of the past, nor to be a simple illustration. Our goals are to make people wonder about *themselves/what they know* and gain knowledge related to our themes” (CS interview, emphasis added). This reflects similar critiques from historians of perfume and evolutionary anthropologists who have questioned the value of using aroma to sensorially evoke an “ephemeral” past (Dugan, 2011) independent of evolutionary, ecological, and cultural contexts (Hoover, 2017) that have altered bodies and environments alike. Indeed, as my own collaborations on such projects has found (Kwan, et al 2016), simply recreating aromas from a historical recipe reinforces the idea that meaning is already pre-inscribed rather than relational or contingent on the current context in which the encounter occurs or the materials involved. For example, on my first trip to the museum in 2015, I remember noticing a mummified foot featured behind glass. Bracketing my then absence of knowledge of the uses of resins and balms, such as Frankincense or labdanum, for ancient rites of burial (much less their directly tangible antiseptic properties), I had no idea what that mummified foot might have to do with perfume history.

It was not until I shadowed a mediator on my first day researching in the museum that I had the ‘aha!’ moment as the mediator demonstrated the relationship between resins, fumigation, embalming and the origins of perfumery through a multimodal example. Given that it is impractical to burn incense in the museum, the mediators devised a little trick to communicate

the principle of smoke without the use of fire. I watched mediator Laurent do this during multiple tours. He would retrieve a simple mason jar containing golden Frankincense tears which he would hold closed, and then, with both hands, shake for a few seconds before popping the lid open to release a little puff of the resin dust, while slowly enunciating the syllables: ‘*par*’ (from/of) and ‘*fum-er*’ (smoke). And then he says, ‘*par-fume*’ and then, in English, ‘*per-fume*.’ Amelie describes this as a “‘whooh!’ effect (or, ‘aha!’) because the visitors suddenly realize the origin of the word perfume through this example of the early use of aroma materials and that it was, and still is, an important common act in every part of the world (AP interview).

Smell prompt

This is an opportunity to engage not only the smell, but also the tactilities, of the Frankincense tears and consider its antiseptic qualities. In some cultures, Frankincense is chewed to freshen the mouth: Try crushing it between your fingers!

As mediation team director Christine notes “using this scented raw material in *Ancient Time* rooms relates to people personally” (CS interview), and also mediates connections between visitor’s own lived practices with incense, personal care products or cosmetics. She suggests that the multisensorial qualities of this raw material “make it an experience people will remember things about it better than a lecture” (CS interview). Citing the social and cultural use of frankincense in North Africa, Christine points out, in “Morocco, they chew frankincense like a chewing gum. Originally it was used for hygiene purposes” (CS interview).

Alongside the materials, there are also the inter-sensory and multimodal affordances of the museum’s ‘*parcours de olfactifs*’ (olfactory course), which consists of a series of Dr. Seuss-like smell machines distributed throughout the museum’s collections. My analysis of these

vignettes responds to the research questions outlined at the beginning of the chapter, with regards to the nature of the aroma materials used not only for mediation but also as a component of interactions. As I discuss in my introduction, my questions for the following vignettes pertain to the contents and maintenance of the smell machines, their use in mediation practices, and the physical, procedural and sensory experiences of interacting with them.

Part II: Volatile interactions

The following section features a cluster of short vignettes focused on scent-themed smell machine interactions, focusing on their use in mediation practices, and an intersubjective experience of smelling their varied aromas and, finally, a ‘peek inside’ at their aromatic contents and general maintenance. Data collection focused on intersubjective activities involving the mediators and myself in relation to these specific interactions, with only indirect reference to museum visitors. While an exhaustive examination of tangible interactions with the numerous scent machines exceeds the scope of this dissertation, I will touch on recent theorizations of tangible interaction, such as Fernaeus, Tholander and Jonsson’s (2008) ‘action-centric’ (rather than ‘information’ oriented) framework, to emphasize the situated and practical embodiments involved in scaffolding ‘volatile interactions’ rather than neurocentric analysis of psychological ‘effects.’



Image 17. Myself smelling rose essence; Image 18. Detail of descriptive text on device.

When I first wrote to the MIP to explain the purposes of my research they were surprised about my interest in the machines, which they explained were old and not very high tech. I said that it was not the technical sophistication of these devices I was interested in but rather, how these smell-themed interactions contributed missing olfactory context to the perfume artifacts in the collection and how (or if) these devices were integrated into mediation practices. More practically, I was also very curious about the nature of the aroma materials contained within and how these devices were maintained. And finally, of course, I wanted to undertake a small study of sniffing them! This first very brief vignette, describes some of the physical embodiments required for using the smell machines through an example of their uses in mediation.



Image 19. Mediator Sabine sharing a smell with a visitor; Image 20. Intern Solveig sniffs the smell machine as Laurent presses the button.

Images 19 & 20 show museum mediators demonstrating the use of the smell machines during tours. In the first image, Sabine, a museum mediator positions the adjustable telescopic output with her fingers to direct it downwards to a visitor's nose. When I first visited the museum, I did not understand the reason why it had this strange design, so when I finally observed the device in action I realized the need for an adjustable output. One of the features of the telescopic output is that it can be lowered for diverse embodiments and mobilities such as the elderly, smaller children and persons in wheelchairs, which reflects an awareness of accessibility that seems overlooked in the design of some smell-themed interactions where the output is inflexible or one-size-fits-all. As well, in addition to the use of the nose, I noted how the design of the device engages far more embodiments involving the head, neck, back, fingers than audio-visual displays. One thing that is not addressed, however, is 'how' to smell, which is a problem that is not unique to the MIP but scent-themed interactions in general.

In Image 19, Sabine leans herself against the machine and presses the button with her index finger to release the scent, augmenting the device interface with her own body and facial expressions, directing her gaze to the visitor. She stays with the machine for a few minutes,

making conversation, observing the visitors and acknowledging their responses to the smells. The mediators are very good at making space for visitors to experience things for themselves, allowing them to reflect on the experience without interference. In the second image, Laurent [Image 20] models the smelling process for visitors with intern Solveig who is pictured sniffing from the telescopic output. In education, such modeling is a useful form of physical demonstration of the activity or skills required for a task. In this way the learner, or, in this case, visitor, has the opportunity to evaluate the physical embodiments required, which involves putting your nose to a strange looking device with a pipe coming out of a box! Unlike other sensory modalities, the invitation to smell is quite an intimate kind of interaction as odorants need to be physically inhaled into the body and make contact with receptors in order to be perceived.

Analysis

This mediated ‘volatile interaction’ vignette highlights the ecological and contextual contingencies of smelling from these devices in terms of the physical requirements needed to operate them (i.e., where the body is in relation to the pipe). Reflecting on these embodied interactions with the device, using the smell machine is not simply about the smells inside but the activity of smelling as an intersensory, multimodal and “whole body” encounter (McBride & Nolan, 2018). As I will explain in my peek inside the smell machine, one benefit of these devices is that they make it possible for many visitors to have a smell of an aroma that is otherwise mentioned in text-only and to provide something interactive when there is no mediator to mediate with raw materials. The next vignette focuses on an inter-subjective experience of the museum’s smell machines in the context of modern chemistry and the development of synthetic molecules.

Volatile interactions: 'Like old cheese, forgotten or something'

In this vignette, I am joined by museum intern Solveig, who generously agreed to take me on a short tour of the five smell machines in a small corner of the museum devoted to the chemical synthesis of aroma molecules. Following my documentation of Solveig's interactions with the smell machines. Given that scent-themed interactions are still relatively new for museums, the purpose of this vignette is to offer an inter-subjective and sensory ethnographic account of these interactions with a focus on their multimodal affordances as scent-themed media along with some of the more practical questions about how such a device is physically engaged. While I have otherwise attempted to try and avoid reducing scent to linguistic descriptors, our dialogue does make use of such descriptors for the sake of representing and communicating our experience of the smells in the devices.

During my research at the MIP, I observed hundreds of visitors interacting with these machines. But this vignette is intended as a means of documenting and representing the operation of the device, rather than serving as a generalizable example of 'typical' visitor/user behaviours. I will first describe the machines, following with our dialogue about the scents, interspersed with sensory ethnographic details about the more physical, ecological and atmospheric dimensions of the encounter. While this vignette is focused on Solveig's interaction with the device and smells, rather than my own, I include a few of my own inter-subjective impressions of the scents to provide some contrast.



Image 21 & 22. Solveig describing synthetic aromas and sniffing the interface.

The first thing we discuss about these smell machines is that they have interfaces at two heights. The five devices have inputs at children's and adult heights, and feature the scents of jasmine, hyacinth, lily of the valley, and fruity green apple and strawberry that are often used in the children's perfume workshops in Grasse. Unlike the standalone devices with telescopic outputs, the output is a flat grid several inches wide. Like the other machines, it has a button that triggers a steady release of scented air. An arrow points to the button and text below says push continuously and smell. The name of the scent is featured in three languages (French, English and Italian), with a funny replica of the aroma source (e.g., silk flowers, plastic fruits) inside a little window at the bottom, where the children's interface is located.

On the opposite side of the room is a set of four telescopic smell devices (such as those featured in the previous vignette) that include a 'constructed' rose 'base' composed from single molecule isolates (such as phenylethyl alcohol), along with an example of a synthetic 'headspace' rose (see a discussion of the headspace technology in the literature review). While the information on the displays is reliable and neutral, something feels lost in translation. For example, the headspace rose, which represents a significant innovation in fragrance development, is difficult to fully grasp from just one line of text. While accurate, the brevity necessary for an

interface can obscure critically important information about aroma materials by focusing the emphasis on their effects. In contrast with the laboratory-like synthetics exhibit is a series of giant copper alembics used in traditional distilling (Benalloul, 2010; Benalloul, G. & Argueyrolles, 2016) that are part of the 19th century collection.

Following Pink's (2009) sensory ethnographic method of video tours, I asked Solveig to give me a short tour of the machines, while sharing her own impressions of the aromas and anything she has learned about them over the course of her month's internship in the museum. Like a museum mediator, she gestures to different features of the interface with her hand as she speaks and moves. Solveig approaches the first machine, which is labeled Jasmine, and places her nose close to the yellow metal output, through which the scents are dispersed. She presses her finger on the button below and holds it for a few seconds while she takes short sniffs:

Solveig: So, I have to say first, these smells are chemicals. So, they are not the same as natural ones. So, for example, here, it's Jasmine. This is well-made for a chemical scent. It's very good.

Smell prompt: synthetic jasmine; jasmine absolute¹⁷

This smell prompt is intended to provide a contrast between the kind of synthetic jasmine that is featured in this vignette and natural jasmine absolute. In general, synthetic jasmynes, however pleasant, leave out the animalic (sometimes referred to as 'poopy') indole compound that contributes to natural jasmine's intensity and complexity as an aroma.

To put it another way, removing the indole from jasmine is sort of like decaffeinated coffee or dealcoholized wine.

¹⁷ For a cultural history of Jasmine, see Aftel (2002).

Solveig seems familiar with the aromas and sharing her assessments of their ‘fidelity’ with their organic counterparts. I had smelled this jasmine interaction prior to our encounter and similarly found it to be recognizable, but also lacking in the funky and “animalic” qualities present in natural Jasmine essences (Aftel, 2014). While I try to refrain from sharing my own impressions, I engage Solveig in some dialogue about her impressions. The next machine says *Pomme* (French for ‘apple’). She presses the button and grimaces.

Solveig: It doesn’t smell very good. It smells more like old cheese, forgotten or something [we both laugh].

Melanie: Maybe they can improve on this one?

Solveig: They try but it’s very difficult, and these are very concentrated smells. So that’s why.

She moves to the next machine, *Muguet* (Lily of the Valley), and leans in to sniff.

Solveig: This one smells for me like the Lily of the Valley. There is no difference between the real one and this one. But we have to know, this is very difficult to do as a chemical smell, because when the flower is cut every single particle of smell goes away so it’s difficult to make, and well made.

Following Pink’s (2009) attention to sensory self-reflexivity I consider how Solveig’s remarks reflect our acquired knowledge of important scientific and historical facts about the challenging synthesis of Lily of the Valley that, I too, gained while at the MIP. For example, it is no accident that Lily of the Valley is a featured scent interaction at the MIP given that it was pioneered by Grasse’s own Edmond Roudnitska, who cultivated a small patch of these flowers in

a small, shady corner of his garden¹⁸ in order to create the note which became the centerpiece of his 1950s perfume classic, *Diorissimo*. Solveig moves on to the next scent:

Solveig: Strawberry. I smell strawberry, but there is another scent. A little bit like the apple, but not so strong.

I note that the strawberry, like the apple, has a kind of candy-like, vanilla sweetness and chemical undertone:

Solveig: The last one is *Jacinthe* (Hyacinth). It smells good. I haven't ever smelled Jacinth so I can't tell if the smell is like the real one or not. But it smells very good.

It is clear from Solveig's responses that she has learned an enormous amount about aroma history and chemistry in just a few weeks of her internship following the mediators as I have. Not only about the background of the synthetic scents, and how they situate modern perfumery, but also in the development of her own techniques of sensory assessment and her ability to communicate these impressions using the language she has learned. Like other staff, Solveig's remarks reflect a professional neutrality towards synthetics among the museum staff, assessing them only in terms of their relative quality or fidelity—their likeness to the fruit or the flower and not according to their own personal beliefs. While Solveig and myself do use hedonic 'likes and dislikes' to describe our responses, Solveig also considers the aromas in terms of their attributes and characteristics as odours.

Analysis

This vignette speaks to the value of inter-subjective smell experiences as a way of comparing and contrasting our own impressions with those of others and considering what we bring to our smell experience and how it is we go about assessing and evaluating aromas – whether through a personal narrative approach or a more scientific type of evaluation. What was

¹⁸ This detail is based on a visit I had with Roudnitska in his garden, which I do not document in this study.

most interesting was the absence of any of the emotional association or narrative introspection that one might be led to expect from the common emphasis on olfactory memory and emotion (Ackerman, 1990; Herz, 2006). Instead, Solveig describes specific properties and qualities of the scent using a deductive reasoning that is not unlike those of wine tasters (WSET, 2017). While there is a parallel to this in the use of calibration within sensory evaluation and psychological studies of smell, that is more of a technical process using standardized and scientific (i.e., “malolactic”), rather than subjective or idiosyncratic (i.e., “stinky old cheese”), descriptors.

Behind the scenes: What’s inside the smell machine?

This next, very short, vignette goes inside the smell machine to explore one of my very first research questions, which concerns the practical back-end workings of the smell machines in order to understand, among other things: 1) how the machines worked; 2) what kinds of aroma materials they contain; and 3) how they are maintained? Apart from the sensory and experiential aspects of the smell machines I have discussed in the vignette with Solveig, here I turn to some of the more technical issues of scent delivery that is integrated into a busy public space.



Images 23 & 24. Noemi refilling the scent machines in the greenhouse.

It was my first day at the museum when I was invited to follow mediator Noemi in her monthly maintenance of the machines. She first explained that this is a very infrequent aspect of

their work, and that the machines are usually refilled and maintained every two months unless they are not working or out of material. The machines can also become damaged from over-use and repaired more often in the summer because the intense heat in the greenhouse evaporates the scents quickly and likely also due to the increased tourism in Grasse during the summer months.

What surprised me was the unexpected simplicity of the aroma delivery mechanism in the form of hand crafted ceramic cartridges. In my video, Noemi grimaces at the squeaky sounds as she unscrews the canister [see image 23], “they are very noisy!” she says, reminding me of the ways the sounds, such as the clanking operation of these metal devices, were sometimes incongruent with the environment or ambiances. Noemi gestures to terra cotta cartridges (or, as she refers to them here, ‘sticks’) soaking in a Mason jar full of amber viscous natural aroma essences such as vetiver, bergamot and clove [Image 24], “You put the stick in this,” she says, gesturing to the narrow metal chamber of the device. But before she inserts it, she brings it to her nose to sniff and then passes it to me. I immediately recognize it: clove! And I say the name in French. Noemi smiles and nods, “Giroffe. Yes!” Noemi works with these aromas every day and so she is used to the intensity of the materials. She remains focused and on-task while explaining temperature fluctuations in the greenhouse during the summer months and how the high moisture level has an impact on the clay cartridges. According to a technician I spoke to at the museum, the smell machines hold about 100 ml of concentrated liquid aroma materials, which can last for three to six months of continuous use. While I could observe the maintenance of several kinds of machines, by and large this consisted of replacing empty metal canisters [see image 25] of aroma material.

Prior to my first visit to the atelier fridge, I had never seen large volumes of essential oils or fragrance materials. With the exception of perfumers, artist-practitioners, or industry-partner

researchers work directly with, or are sponsored by, commercial fragrance manufacturers, most scholars and educators do not have access to such materials. These encounters were a reminder of our lack of access or knowledge of aroma materials that are typically inaccessible to the public.



Image 25. Aroma materials used in the smell machines; Image 26. Sabine with fridge.

Throughout my participation on the tours, the MIP mediators emphasized the value of using synthetic molecules *as well as* raw organic materials. As Amelie explained, this is because of their significance to perfumery, “since the end of the 19th century. We use synthetic molecules to talk about chemistry and their asset for the perfumer. Furthermore, people can sometimes connect more with the synthetic molecules than with the natural raw material” (AP interview). Amelie recalled her first encounter with the atelier’s aroma materials fridge [see image 26], which Christine suggested Amelie should explore on her first day at the MIP. She describes the overwhelming experience of spending a full day smelling *everything* in the fridge:

This very day, I was totally new to the MIP and to the perfume industry (I’m not originally from Grasse at all) but despite of that, I was very surprised to find in the fridge many raw material smells I knew! (AP interview)

She was intensity of the individual aroma compounds but also of the complexity of the composed blends. She describes the experience as a totally “unique opportunity” given how:

We don't usually take the time to smell things: there I was taking this time and discovering that it was not just one odour at the time but more the different sides of a natural odour (I was discovering molecules!) and I was also discovering the fact that they change/evolve. (That was really new to me). (AP interview)

Discovering the fragrance 'Sous-bois' among them, Amelie notes that she was especially impressed by the perfume's "evocation," which she likens to a "whole forest in a bottle!" (AP interview).

During our discussions about the materials used in the MIP, Christine explained, "our purpose is not to oppose natural and synthetic. Smelling brings visitors to know the products and to know themselves" (CS interview). For example, in planning for the memory workshop with seniors that I turn to next, the mediator's selection of fragrant materials and essences include both synthetic composed fragrances and a few natural essences. The materials selected for the workshop I observed consisted of general aromas and historic fragrance compositions from specific eras, and single aroma notes. Scents are selected according to a theme or narrative Laurent has developed, featuring prompts for smelling. In this case, it is the story of *Eau de Cologne*, which involves the smelling of individual notes that are featured in the composition prior to smelling the whole. As Laurent notes, "when they [the participants] smell EDT they say oh lemon then they say ah but maybe with orange or something else. 4711 is well known in the east. Here [in Grasse] it is *Roger & Gallet*, the classic one¹⁹. They use it not as a perfume, but to feel fresh" (LP interview), which is reflected in the very last vignette.

Analysis

In addition to my peek behind the scenes, inside both the smell machines and also the refrigerator, each of these scenarios presented me with opportunities to not only ask questions

¹⁹ This is listed in the source list appendix.

and observe the mediators but also inter-subjectively and inter-sensorially participate in the activities I was documenting. Through these experiential encounters, I gained an embodied and multimodal understanding of the mediator's practices by touching, viewing, examining and smelling the same materials, substances and designed devices they work with. In each of these vignettes, I also include instances of multimodal, embodied and non-verbal communication that are often neglected in discursive accounts of smell that defer to discursive information rather than action. Throughout these encounters, it was clear that the staff were sometimes bemused by my focus on the aroma materials and devices, possibly because materials orris or oakmoss are not so uncommon or inaccessible if you work in Grasse. Whereas for many members of the public visiting the museum from places that do not produce fine raw aroma materials, the whiff of castoreum, orris root or *rosé de Mai* is likely their first, and their last, opportunity to smell them.

Part III: Aroma as a living heritage

This final section explores the selection and use of aroma resources in the context of mediation as a link to memories, personal narratives and lived experiences, which is a component of the museum's social outreach into the community. This extended narrative vignette documents the planning and facilitation of a memory workshop that I observed at a local nursing home in Grasse. In it, I shadow Laurent as he facilitates inter-generational, inter-cultural, inter-sensory meaning making through the process of smelling, reflecting, talking and singing about scents. It is also an example of aroma as a kind of living heritage of Grasse (LP interview).

In keeping with ethical research practices involving vulnerable populations, such as children and the elderly, I have anonymized identifying details, making reference to only the most general utterances, drawing on interviews with Laurent and a multimodal analysis of his

workshop planning and facilitation contrasted with the documentation of my own inter-subjective and sensory ethnographic participation in the workshop.

Singing songs and ‘expressing’ poems: Aroma as a lived experience

As the most senior mediator in the MIP, with over 20 years of experience, and fluency in English and several other languages, Laurent is involved in planning many of the tours and workshops in the MIP, including ‘memory’ workshops with senior citizens. The workshop I documented and participated in provided a sensorially stimulating social interaction between members of a community who may not know or interact with each other regularly. Laurent explains that the workshops are very flexible and there is no pressure to participate, one can simply observe:

They know that there’s the workshop, so they have the information. They come if they want... even those who may not be in good spirits or wish to participate initially may warm to taking part because they are always made to feel included. Sometimes I give them the *mouillette*.²⁰ [For example,] there was one woman, she was sitting. I could see from her face she won’t speak to me this day. I tried to give it to her. She spoke about one smell. But she spoke (LP interview).

Laurent’s comments provide some context about the nature of the environment in which the seniors live, and also his sensitivity to their preferences and needs. I will return to these dispositional factors a little further on. The following is a brief examination of the workshop format with reference to specific materials involved and how they are used to create connection.

Laurent prepares for the workshop by choosing aroma materials mostly consisting of fragrances and individual essences from the atelier fridge. He brings these, along with pencils

²⁰ As per the vignette about the *mouillettes* these are paper scent strips used for smelling fragrance materials. They are used at the MIP for sharing a variety of aroma materials, not just perfumes.

and paper and a box of *mouillettes*. At the start of the workshop he dips a handful of *mouillettes* into one of the small bottles containing a scent. He says the name of each of the participants, and “smell it,” as he hands out the scent strips, “Madame [name], *sentir*... Monsieur [name], *sentir*.” I received mine and took a few sniffs. I volunteer a guess out loud: “*fruite? citron?*” [fruits, citrus]. It is familiar to me. I’m certain I have smelled this before. Another participant asks Laurent if it is “*fleur d’oranger?*” [orange blossom]. This aroma is a very familiar scent to residents of Grasse. The composed fragrance we are sniffing, though initially very bright and citrusy, continues to transform, giving way to other notes. Guesses continue: Is it wood?... Dry flowers?... Rose? Lemon?... Herbs?... they ask. One participant says it smells like a mixture of fruit and flowers and asks if it is from Fragonard, one of Grasse’s perfumeries. Laurent says “*No. Musee. Pas fragonard*” [no. (it’s from the) museum. Not Fragonard].

Throughout this intersubjective sharing of olfactory impressions, Laurent makes note of each individual’s contributions, nodding his head and smiling brightly in acknowledgement as he repeats each contribution aloud. Thanks to my study of French aroma descriptors, I am able to follow these guesses, but not always the more conversational or narrative responses. Laurent anticipates my language limitations and briefly translates a comment he thinks useful to me. For example, he says to me in English, “It is always the same question: Is it local? *De chez nous?*” And with this he brings us all back together. He says in French, and then to me in English, “*Alors!... qua doit?*” [What else?] He translates some more of the participants comments to me, “she says it is like ‘a lady going for a rendezvous with a gentleman.’” Laurent says to the group, “*Très difficile!*” [It’s difficult!] He waits a moment and says “*Alors!*” and then begins to list off the ingredients in English and in French: “*Il ya de... [there is...]: rosemary! ...citrus!...*” After

each guess, he says out the name of the participant who guessed the note, or simply monsieur/madame as he gestures to them:

Fleur d'oranger [orange blossom]... bravo Monsieur!

Rose... bravo Madame!

Geranial [geranium], bravo Melanie!

While identifying aromas is not, as Laurent had explained, the main purpose of the activity it is nonetheless a fun experience that can precede more personal elicitations. Laurent reveals that what we are smelling is a reproduction of a 14th fragrance which is known as *L'eau de la Reine Hongarie* [the water of Hungary], which is more commonly known as *Eau de Cologne* [like 4711, which I have cited in the sources] The story of Hungary water, or *Eau de Cologne*, is an important one in the history of Grasse, as later versions of the cologne helped to popularize Grasse's own orange blossom, petigrain, rose and other herbal aroma materials. As I would also learn more directly from taking a beginner's perfume workshop at Fragonard, the activity of creating an *Eau de Cologne* is one of the best ways to understand and learn about these materials and the physical and aromatic differences between essences of rosemary, bergamot and orange blossom and what happens when you put them together.

Smell prompt: '4711'

4711 is an accessible and definitive example of *Eau de Cologne*. Having a sniff of this fragrance provides an opportunity to compare your own impressions with some of the 'notes' described. If you apply the scent you will note how the notes you perceive will change over time, starting with citrus fruits and herbal notes and moving into more floral aromas.

Laurent explains that the workshops are not always a guessing game but a creative and inter-subjective approach to sharing their experiences, “I want them to express with words, but also in the Atelier workshop with words, colours and shapes” (LP interview). Laurent and the other mediators refer to this kind of workshop as a means of inviting these individuals to “express their testimonies and experiences” (LP interview). This process begins a dialogue, modeling the practice of inter-subjective sharing. And then they can try this out with each other, which is similar to what Canadian teachers refer to as ‘think, pair, share’:

They express with me when I ask ‘what do you smell? They also express and exchange with their neighbours sitting around them. Sometimes it is 16 or 18 persons. [But] sometimes I can’t hear what Madame is saying about Jasmine, so I have some time to make them repeat, because I want to share with everybody. So, they answer my question, ‘and what do you think? and what do you feel?’ They start to speak with their neighbours. And sometimes they manage to know each other. Because in such a senior’s home some are on the first floor, others on the second. And we can see that some of them are becoming friends! (LP interview)

Laurent explained that not everyone at the senior’s home is from Grasse and that many residents come from other parts of France to retire in the *Cote d’Azur* because of the nice weather and so the narratives are not always about Grasse. To this end, Laurent brings copies of archival materials such as photos or newspapers as part of his mediation along with aromas that are of a time, where sensory culture is shared through other *collective* reference points, such as popular culture or music:

There is a good exercise to do with French seniors. You have them smell violet for example. So, they are going to say, ‘oh the sweets from Toulouse, etc.’ But there is a

song concerning violet and they all start to sing. There are a lot of perfumes but also smells that you find in the songs. So, I often do this when we have finish. Yes, its violet. Do you remember? There is a song. (LP interview)

During my visit with the seniors, the participants in the workshop sang Francois Lemarque's wartime song Marjolaine,²¹ which refers to the soldier's girlfriend on the homefront 'Marjorie,' which was especially touching as it is the name of my late grandmother (to whom this dissertation is dedicated). When they sang during my visit, Laurent, recalling our interview, exclaimed, "I didn't ask! [for them to sing]." Later while we sniffed at the scent of pine, one of the participants in a workshop remarked to me that it reminded him of Canada, and began singing to me *Ma Cabane au Canada* and the others joined in! As Laurent explained to me in his interview, it is the *social interaction*, more so than the particulars of the aroma workshop, that benefits them the most.

I asked Laurent how the mediators elicited such personal stories, and he said the job of the mediator is to make people "comfortable" by "not judging" what is shared. This disposition was evident in his own mediation style, which I document in the following example vignettes. As Christine and Amelie earlier told me, there is "no right or wrong answer" (CS interview) nor is it about the quality or "technique" (AP interview) of a particular form of sharing (writing, sculpture, drawing, aroma blending). This is not about skills development but sharing:

It's not 'writing' it's about *expression*. Write what you *feel*. We can see if we can make a small poem of three or four lines. I want them to write and say what they want. It does not have to be a poem. (LP interview, emphasis added)

²¹ Listen to Francis Lemarque's Marjolaine on Youtube https://www.youtube.com/watch?v=XwpQNHmpe_E

These distinctions, between “writing” and “expressing,” “feeling” and creating “poetry,” is a reminder that the activity is intended for fun rather than appealing to an aesthetic form or genre of narrative. In our background interviews, Laurent explains that some of the most elderly Grassoise women had been flower pickers in some of the last remaining flower farms. And so, the aromas of the May rose, jasmine flowers, tuberose, violets, orange flowers would remind them of earlier times in their lives. The same was true for the men who were mostly employed in the distillation factories such as *Lautier Fils, Roure, Chiris* until the 1960s (Benalloul & Argueyrolles, 2016). During one of our interviews, Laurent presented me with a binder of photos, newspaper clippings, simple artworks and poetry.

One poem really stood out to me, inspired by the iris flower, from one of his earlier workshops. Prior to my visit to Grasse I had never smelled iris, nor did I know that the aroma material does not come from the flower but the root, known to perfumers as orris root. While Orris is also among the most expensive perfumery ingredients, given the quantity of material required to produce just a small amount, for the participants in Laurent’s workshop its value is more personal. For my purposes, it is one of the very best and most accurate descriptions of the aroma I have come across.

<p>Iris Cette odeur est Douce. Pourtant cela rappelle le Vieux grenier, Les Combles, L'Humidité Et la Terre. Iris Cela me fait penser à une plante à proximité de l'eau Une fleur dans un pré inondé</p>	<p>Iris This smell is sweet. Yet it reminds us of the old granary, The attic, Moisture And the Earth. Iris It reminds me of a plant near the water A flower in a flooded meadow</p>
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In addition to its evident evocations of a specific place and time, it is also somewhat more ecological and intersubjective than it is a purely personal account. The reference to “us” is specifying the inter-subjective nature of the workshop, whereby participants are sharing stories as a collective experience of an aroma that was familiar to many. This is also description of the *properties and qualities* of a plant and its link between lived and botanical ecologies (“the old granary,” “the attic,” “the earth,” “near the water,” “a flooded meadow”) that brings aroma back to earth, to source and provenance.

Smell prompt: Synthetic Iris; Orris root concrete; raw orris root

Here is a contrast between synthetic Iris fragrance and orris root. You may note the striking differences between the two, given that the Iris fragrance is more of a concept in contrast with the natural orris. Given that the ‘iris’ note comes from the roots and not the flowers of iris, a further point of contrast is the raw orris root which has very little scent but conveys something of the ‘earthy’ character that communicates its source.

These details are especially relevant in concluding this chapter, in terms of its emphasis on the ecological. It returns to the land and to the terroir as the first location of inquiry, which is

the focus of the next chapter. For a reader who has not yet had the opportunity to smell genuine orris root (from which the namesake fragrance is derived), the poem really captures some of the more elusive qualities of the scent, which is consistently described as earthy and musty, not unlike vetiver (also a root). And like the vetiver, the description communicates something about its origins as a root in the ground, which quite directly and independently of inscription, provides an ecological basis for the modal affordance.

Analysis

As I observed from my own participation in Laurent's workshop, the objective was not so much to engage with the history, significance or cultural value of the selected aroma materials but to facilitate sociable and 'comfortable' interactions, sensory stimulation and different ways to share feelings and experiences, including talking about scents, creating stories or singing songs. This is also a somewhat different use of the term (olfactory) 'memory' than examples I referenced earlier in the literature review, which do not discriminate between deliberate and conscious acts of recollection and the immediacy of odour-triggered reactions. In this case, the memory workshop is intended to encourage social interaction and sensory stimulation and not as a means to elicit the *recall* of a *specific* past experience. Throughout this vignette, there is an emphasis on a view of mediation that is not simply about particular "techniques" or "theories," but rather, a *disposition* –towards inclusion in which mediators and participants alike can see themselves and their own experiences reflected in the activities and practices of aroma as a *living* and *tangible* heritage.

Conclusion

A key theme I developed from my findings in this chapter is the role and significance of natural or raw materials as richly ecological and contextual resources to understand, experience

and communicate with and through aroma as means of forging social and cultural connections. I have argued that these multimodal materials ‘communicate’ directly and physically, rather than needing to be rendered meaningful through “inscriptions” (Ingold, 2013). These materials have tangible physical and sensory affordances that provide a physical connection to aroma culture that both extends, but also disrupts, historically given narratives. As I have stated elsewhere, this reflects the idea that the activity of smelling is a deliberate and engaged form of “physical knowledge” (McBride & Nolan, 2018; Horowitz, 2016) involving ecological, embodied and sociocultural contingencies. In response to the question of their multimodal potential, my focus on the directly experiential encounters with the physically tangible properties and affordances of aroma materials returns to the more ecological basis of Gibson’s idea of an ‘affordance’ that resides in environments and where meaning is created through ‘use.’ For example, in my first vignettes I draw attention to the tangible properties of raw natural materials, which can be more fully apprehended through an intersensory orientation that includes active observation.

My realization that MIP mediators are using progressive practices, not unlike those that inform Canadian teacher education programs, was yet another reminder that knowledges are not always “culturally” specific (Pink, 2009). This is complemented by my choice of sensory ethnography, which serves to reject, as Pink notes, “‘traditional’ forms of cross-cultural comparison” that tie culture to place (Pink, 2010, p. 331) or affirm, as I discussed in my literature review, ‘monolithic’ social or cultural categories common to anthropological accounts of sensory difference and identity. During our interviews, and in response to my questions about the principles and practices of mediation, mediation team lead Christine had cautioned against *over-theorizing* cultural mediation principles like those of Caune, given that they are contextualized by the community or location in which they are used. This was reflected in the

situated practices developed by the MIP team, which are specific to individuals and contexts rather than discipline-bound theories or philosophies.

In the end, as the mediators themselves suggested, *mediation culturale* is better understood, like aroma culture itself, as a kind of *doing*. While the aims and contexts of cultural mediation are quite different than those of public school educators, the mediators at the MIP often characterized their disposition in terms that are quite similar to what educator and scholar bell hooks (1991) describes as ‘engaged’ pedagogy, “where teachers must be actively committed to a process of self-actualization that promotes their own well-being if they are to teach in a manner that empowers students” (hooks, 1994, p. 14). Like the engaged teacher’s commitment to ‘do no harm,’ the key observers in my study embodied an inclusive disposition towards the public reflecting an emphasis on participation or even “emancipation,” in the critical pedagogical sense (Ranciere, 1991), rather than, as the fragrance industry does, treating them as ‘audiences’ or ‘consumers’ of transmission or transaction.

Chapter 5: Tangible inquiries with aroma

Aroma inquiry prompts: *Cistus labdanum*, dried rosemary/rosemary essential oil.



Image 27. Wet patchouli leaf in the MIP greenhouse.

Introduction

‘Where are the roses?’ This is the first question of many visitors to Grasse, regardless of the season or the name of Grasse’s most emblematic (*Les fleurs d’exception du pays de Grasse*, n.d.) flowers, the *rose de Mai*. Yet I too had this question when I first visited Grasse, wanting to see and smell the celebrated jasmine flowers and roses, so defining of the region’s botanical and cultural *savoir-faire* (‘know how’).²² However, it was not until I began residing in Grasse to undertake this study, a full month before the annual Rose Expo that I began to critically reflect on the influence of a “hidden curriculum” (McBride & Nolan, 2018), of acquired cultural beliefs

²² UNESCO heritage reference here to Grasse’s perfumery *savoir-faire*.

and values, that shaped and structured my own preconceptions and expectations of Grasse well before I had even arrived.

As my research progressed, I began to understand the consequences of engaging with Grasse, and smell alike, in purely conceptual and representational terms but also of the fallacy of a so-called “primal” (Merleau-Ponty, 2012) experience, somehow independent of internalized dispositions or physiological factors. I began to note, as this chapter shows, how the deference to received and culturally valued narratives of place (Cohen, 1988; Edensnor, 2006; Herbert, 1996; Rosati-Marzetti, 2015) can not only shape but also preclude the possibility of having ecologically or socioculturally “situated” (Lave & Wenger, 1991; Pink & Leder Mackley, 2013; Fors, Bäckström & Pink, 2013; Pink, 2012) experiences with sensing, learning, doing and knowing things “for oneself” (Ingold, 2013).

The MIP’s 2.7 hectare²³ botanical gardens, *Jardins du Musée International de la Parfumerie* (‘JMIP’) (Présentation des jardins, n.d.), just down the road from the MIP in *Mouans Sartoux*, appeared to offer just such a grounded and situated intervention, to provide an understanding of the seasonal and ecological contingencies of Grasse’s valued aromatic plants and flowers, beyond their representations in cultural production or tourist publications. At the heart of this chapter is what I came to know most directly about Grasse through the ecologies and ambiances of the garden when I was able to, figuratively, and also literally, put the map or the guide aside. In keeping with the beginner standpoint that I have been articulating from the introduction, my descriptions of the garden reflect my non-expert and ‘unschooled’ status at the time of research. Accordingly, I do not appeal to ethno-botanical or scientific approaches (as they were unknown to me at the time) to render the garden in specialist terms, but, rather,

²³ Les Jardins du MIP. <https://www.youtube.com/watch?v=IhnU2mLvYgo>

through a more open-ended and *free-range* inquiry that explicitly reflects theoretical orientations, methodologies and approaches I will outline further.

The vignettes in this chapter offer a contrast between some of the more explicitly scaffolded and mediated vignettes in the previous chapter with more unstructured approaches to understanding, and interacting with, living ecologically-situated aroma sources through a self-directed and tangible inquiry with those phenomena. With the exception of the first vignette, which takes place within the MIP's rooftop greenhouse in the town of Grasse, most of the research presented in this chapter was undertaken in the MIP's gardens in *Mouans Sartoux*. The vignettes in this chapter work together to articulate an *ecologically* (Gibson, 2015) grounded and *inquiry* based (Eisner, 1991) approach to understanding, and engaging with, the observable and tangible properties and qualities of aroma sources and materials that intervenes on a neurocentric and symbolic orientation to sensory perception as a purely ontological or social-semiotic project. Drawing on both my primary research questions and themes developed in the previous chapter, this chapter takes a pedagogical and methodological turn to ask the following questions: 1) How do prescribed *pathways* of acquired and representational knowledge obscure or impede *self-directed learning inquiry* within ecological contexts? 2) What kind of knowing, learning or understanding are *emancipated* when one puts the *text* (or map) aside (de Castell, 2009)? And, 3) How do the approaches outlined in this chapter contribute to a more *ecologically grounded* and *extra-social* understanding of modal "affordances" (Kress, 2009) that extends, or exceeds the social semiotic foundations of multimodal analysis?

Drawing on my developing methodology, tangible inquiry, I will examine selected ecological aroma sources, in context, previously specified methodologies that attend to knowing as a mode of inquiry. As I have elaborated in my theoretical foundations and methods chapters,

my theoretical standpoint reflects commitments to an “emancipatory” (Ranciere, 1991), and “transgressive” (hooks, 1994; Giroux, 1983) pedagogical research *praxis* that confronts the “bewitchment of language” (de Castell, 2009) to realize more “liberatory” (Freire, 2000; 2014; 2015) and, also, “transformative” (Ingold, 2011a) ways of doing, knowing and communicating. To this end, my analysis is focused on the physical, ecological and tangible dimensions of plants, ecologies and materials contextualized by the spatio-temporality of the seasons in which I encountered them, rather than formal botanical or perfumery sources, which I did not have access to at the time. I will, however, make supplementary use of these supporting ‘facts’ and terminologies for the benefit of the reader.

Extending the format of previous chapters, these seasonal and site-specific inquiries are given in the form of narrative vignettes interspersed with ‘Aroma Inquiry’ prompts intended to provide a tangible and multimodal grasp and understanding of the ecological contingencies of ‘affordances’ on other phenomena (i.e., heat, light). My units of analysis follow the same rationale as the previous chapter using photos, video and field notes from my own situated and inter-subjective shadowings of the JMIP’s gardeners in their work and transcriptions of audio interviews. Unlike prior “sensory” ethnographies of gardens or gardeners (Pink, 2012; Tilley, 2006) are not focused on the sensory *affect* or *practices* of the gardeners, but are, instead, intended to provide situated context for the discussion of their perspectives and also an inter-subjective counterpoint to some of my auto-ethnographic accounts. This chapter features my own developing method of ‘tangible inquiry’ as a *practical*, and directly experiential, approach to exploring, identifying, interacting with and documenting the multimodal and sensory affordances of living plants, material tools and objects, environmental ambiances as resources for inquiry based learning, exploration and interaction. As I outlined in my methods chapter, this

intervention is intended to both extend, and intervene on, aspects of multimodal analysis and sensory ethnography from which my theoretical and applied orientations depart. Data presented in this chapter was collected in the month of April 2016 with a reference to earlier visits to Grasse in 2015. Research sites include the rooftop greenhouse at the MIP and its gardens and JMIP, in nearby Mouans Sartoux.

Tangible inquiries

As I mention in the previous chapter, my very first visit to the MIP was both unplanned, and also rushed, with little more than a glance at the artifacts or the accompanying display texts and media that structure their engagement within an historical timeline. And yet this apparent constraint also resulted in my “improvisation” (Pink & Leder Mackley, 2016) of a *self-directed* “pathway” (Ingold, 2011a) off the pre-defined routes of the museum to engage with the many scent-themed features, such as the rooftop conservatory and smell interactions, that were most relevant to my research interests. In contrast with the previous chapter’s more structured and carefully planned data collection, the vignettes in this chapter examine *how*, *why* and *when* to consider a more *free-range* orientation to knowing through open-ended inquiry to, as the gardeners told me, “just go into the garden.”

Tangible inquiry: Sticky learning with labdanum

This first auto-ethnographic vignette returns to the MIP’s rooftop conservatory that I described in the previous chapter to engage in a multimodal and tangible inquiry with the *cistus ladanifer*²⁴ (cistus) shrub growing there. Given the speed of the tours I participated in and partly documented, this encounter is also an opportunity to take the time, I myself needed, to more fully engage with the complexity and richness of an ecological feature that might not appear so inviting as the flowering *Bigaradier* or the climbing rose vines. Without any knowledge of the

²⁴ Cistus (also known as ‘rock rose’) broadly refers to the plant; labdanum to its resinous gum.

cistus plant or the history or uses of its sweetly aromatic resin, I actively and directly observed and experienced its distinctive properties and qualities along with gaining a highly situated understanding of the ecological, seasonal and structural contingencies particular to my own encounter with this specific plant in this specific location.



Image 28. Hallway leading to the greenhouse; Image 29. Sticks of cinnamon displayed in a window box between the greenhouse and hallway. Vanilla vines are visible in the greenhouse.

Along the hallway leading into the greenhouse [Image 28] there are tall window boxes that offer a first peek at some of the exotic plants in the conservatory on the other side [Image 29]. Between the gaps of these window boxes there are common raw aroma materials such as vanilla beans and dried cinnamon sticks and cloves, intended to link the unfamiliar plants with their more familiar products. More of a conservatory than a garden, the greenhouse features tropical and sub-tropical plant species, such as vanilla, cardamom, patchouli, ginger and vetiver known for their distinctive aromas.

Upon entering the conservatory, I noted how the sauna-like atmosphere offered ecologically situated clues about the conditions and contingencies that support the biological

entities in this environment. As I have argued in my methods chapter, this kind of sensory ethnographic (Pink, 2015) detail is often missing from social scientific research accounts that neglect the extra social and ecological contingencies that often “afford” (Gibson, 2015) the encounters, interactions and phenomena we perceive. Thus, this combination of ecological and built/structural (Henshaw, 2013) affordances, such as the thermal and visual sensations of sunlight streaming through glass panes, the sound of the ticking ceiling fan (a reminder of the necessity of air movement), and sensation of moisture generated by a series of tiny, ceiling mounted jets periodically misting the plants, constitutes an ecology that supports the life of the mostly tropical plants in the conservatory.

For some visitors, especially urbanites like myself from cooler climates, the greenhouse is a first encounter with semi-tropical and tropical plants—such as patchouli, vanilla, vetiver or cardamom, that are more familiar in their processed forms, such as spices, flavourings or fragrance ingredients. For example, this was especially the case with the leafy green patchouli [Image 37] and tall vetiver grass (as discussed in the mediation chapter), which I would not have identified in their living form. Unlike most *look-but-don't-touch* greenhouses I had visited before, visitors to the MIP are permitted, even encouraged, to touch and rub the leaves of the plants, which is a key distinction between the MIP and other institutions, which I will elaborate further on.

As I would later learn from my readings of the “natural histories” of aroma materials (Aftel, 2001; Arctander, 1960) fragrant essences derived from the roots, bark or fruits of trees and plants require complex and considerable processing to express their scent. Thus this (safe) opportunity to examine which part of an aromatic plant has a discernable scent is a first example of the use of tangible inquiry as a means of finding something out *for myself*. From a critical

pedagogical standpoint, the significance of directly experiential resources and learning environments cannot be over-emphasized at a moment when representational and screen-based learning resources are replacing traditional physical resources and infrastructure that have crucial ecological and sensorial affordances that exceed simulation.



Images 30. *Cistus Labdanum* plant; Image 31. Ground-level descriptive text.

Just outside the conservatory on the outer roof is a *cistus labdanum*²⁵ shrub [Image 30], which I learned during the tours, is common in and around the continental Mediterranean. But when I first encountered it, without looking at the sign, I knew exactly nothing about the *cistus* except for the physical features of the plant that I was able to examine and touch thanks to the designed affordance of its proximity, within reach of the walkway [Image 30]. Despite my poor French, I deciphered from the ground level sign [Image 31] that *cistus* is the source of the sweet and smoky *amber* note in perfumes, which is derived from the gum that coats the leaves and stems. However, for a visitor without any prior knowledge of European perfumery lexicon, or

²⁵ Also known as 'rock rose'.

botanical classificatory systems, this text held little meaning or significance with no way of linking it to some physical or lived connection. Curiously, when I first visited the greenhouse the previous June the labdanum sign was partly obscured by a flowering lavender [Image 31], which served as a reminder of the ways that our attention is pre-directed in such environments and often *away*, from sources of information that might more directly communicate something of their nature to not only through our senses but also through the physical embodiments required to engage them (McBride & Nolan, 2018). As I experienced it there, the most significant and definitively multimodal information was expressed most directly, and immediately, with and through the cistus; its properties and qualities, its location, and its environmental contingencies and also to the whirling bees and crawling insects responding to its chemical communications. As a further point of context, I was privileged to observe the cistus transform through its seasonal incarnations in both spring and summer.

The images below [Image 32-34] are from my first encounter on a warm June afternoon the previous summer. The shiny, gooey looking cistus was full of copper coloured seed pods and drooping yellowed leaves, which I perceived as sickly given my inexperience with plants. When I reached up to touch one of the pods, I was taken by surprise when the gluey leaves and branches pulled on my skin, leaving a sticky trace along the back of my hand as I retrieved it.



Image 32. The residue of a tangible inquiry: sticky labdanum gum on the back of my hand.

Image 32 shows the shiny trail of syrupy brownish gum across the back of my hand, made more visible thanks to the affordance of sunlight that bounced off its oily surface. In this photograph, I am holding one of the scent strips that are used to share the scent of labdanum during the museum tours. While the scent strips focus one's attention on the aromatic qualities of the labdanum, they provide a less intrusive mediation for those who may not be inclined to physically touch or examine the sticky and intensely fragrant plant.



Images 33 & 34. Shiny sticky twigs, leaves and cistus capsules up close.

Aroma Inquiry Prompt: Sticky learning

The following ‘Aroma Inquiry’ prompt is an opportunity to engage in a multimodal and tangible inquiry with labdanum resin to contrast your own impressions with those I have described. The point is to try and focus on the *tangible* properties and qualities of the material; its *form* (liquid, solid?), its *characteristics* and how it *behaves*, and the ways that our observations of these qualities are contingent on other affordances (such as light, heat, movement), rather than searching the mind for aroma descriptors. This prompt is intended to extend (and disrupt) a text-only account through a directly experiential and multimodal (visual, tactile, thermal and olfactory) interaction where information is communicated by and through the substance itself and your activities with it.

Aroma Inquiry Prompt: *Cistus labdanum*



Image 35 & 36. *Cistus labdanum* in various contexts.

Materials needed: *Cistus labdanum* resin [see Appendix A for sources]

First, with the cap still secure, turn the bottle upside down. Observe the color, viscosity and how the quickly or slowly the resin moves. Consider how the available light and the use of movement differently *affords* the perception of these facets. Next, remove the lid (place it facing up so as not to leave any material on surfaces) and tip the bottle opening against white paper (or scent blotter). As soon as you open the bottle you will note the intensity of the scent. Don't just breathe, sniff! You may wish to apply small amount to your skin. Then consider how the scent changes over the course of a few hours. Your final clue about the solubility of *labdanum* resin will emerge when you try to wash it off with soap and water (don't): Use olive oil²⁶ or other food grade oil and/or rubbing alcohol to remove remaining traces

Note: *If you cannot engage in this interaction, just consider, how such an activity might serve to provide context for the text and images that describe it.*

Almost as soon as I noted the labdanum on my skin, I was struck by the sweetness and intensity of the scent. The smell was as complex and beautiful as a perfume. When I first encountered it, I

²⁶ In the MIP's ancient world collection, they have several ancient Roman *strigils*, a metal tool used to clean oil and dirt off the skin before bathing.

did not have words like ‘balsamic’ or ‘animalic,’ to describe the aroma.²⁷ The first words that came to mind: sweet, smoky and ‘perfumey.’ It was not until the April the following year that I got to see and touch the large, delicately papery, spotted white flowers that had just unfurled within the first days of my arrival in Grasse. I was told that the flowers had only just bloomed, and indeed the petals were still wrinkled and creased like crumpled paper [Image 37]. I made note in my notebook of the sensations of the cool, soft, fine petals that felt almost like skin.



Image 37. Cistus bloom, April 8th, 2016.

I also noted how the big showy flowers transformed what I had initially perceived to be a ‘sickly’ looking plant into the sort of striking botanical feature many visitors to Grasse hope (and sometimes expect) to see. Indeed, the contrast between the form of the same plant between seasons was another reminder of the role of *temporal* contingencies that are obscured in texts about flowers or plants that represent them when they are in bloom, rendering them unrecognizable at other stages. I wondered what the presence (and attractiveness) of the flowers might signify or activate in visitors who might otherwise overlook the plant I first encountered? This question, of the anticipated, and “imaginary” (Castorius, 1998), expectations of the botanical and ecological features of Grasse are explored in more detail in the following vignettes.

²⁷ In her *Essence and Alchemy: A Natural History of Perfume*, author and natural perfumer Mandy Aftel describes the scent of labdanum as “sweet, herbaceous, balsamic odor with a rich amber undertone” (Aftel, 2001 p. 69).

Analysis

In retrospect, it was not until after I had returned from Grasse that I was able to begin engaging with some of the historical and cultural texts and narratives²⁸ about *cistus* plant or its *labdanum* gum and of the qualities that had been communicated to me through the physical tactilities and chemical signals of the plant. In this regard, apart from my own role in assessing the observable attributes of the plant and its *meaning* was constituted not by texts or professionals, but through the integration of spatio-temporal, ecological and environmental contingencies that *afforded* those *sensory experiences*. This is not to dismiss the value of texts but to reorder their use as a supplement, rather than the primary source, of what we can know. In fact, my experience of the labdanum served to *ground*, contextualize and *enrich* both historical (Aftel, 2002; Arctander, 1960) as well as scientific (Bousta, Farah, Hamsas, Mansouri, Soidrou, Benjilali, & Mhamdi, 2013; Greche, Mrabet, Zrira, Ismaili-Alaoui, Benjilali & Boukir, 2009) literatures on the uses of *labdanum* resin in the ancient world (e.g., for pomades, perfumes and embalming) through the properties I directly observed and experienced, such as its water resistance and stickiness and the pleasantly complex aroma. Thus, to touch and smell the resin, received facts and histories of labdanum became more *sticky* and salient, making a link through time and space between myself, the plant and its uses.

Considering the observable qualities and properties of labdanum, this vignette, which I have come to call my ‘labdanum lesson,’ is intended to show how the relatively esoteric knowledge of the aroma materials of the ancient world, of the origin of perfume, and of fragrant rituals and burial practices, can be directly *communicated* through the tangible and intersensory affordances of the natural aroma materials themselves. It also thus serves to provide an answer to

²⁸ Natural perfumer Mandy Aftel notes, shepherds in the ancient world collected the gum which got stuck to the coats of sheep and goats, which they collected using a ‘ladanisterion’ comb (Aftel, 2001, p. 94).

the question about how the idea of the multimodal *affordance* can also serve *extra* social purposes when multimodality is reunited with the idea of affordances that Gibson (2015) had originally intended.

The next vignettes provide a counterpoint from which to contrast, compare and assess my observations from this auto-ethnographic vignette with the perspectives of the gardeners of the JMIP, who are far more fluent in the many languages of plants (Baluška & Ninkovic, 2010; Pollan, 2001; Wohlleben, 2016) and ecologies that I was only just learning how to listen to. The stories, experiences and perspectives of the gardeners complement and extend the own self-directed inquiry featured in the first vignette.

Vignette: A 'generous' garden



Image 38. Iris flowers in bloom, Jardins du Musée International de la Parfumerie.

This next vignette draws on two separate visits, where I sought to find out, first hand, why, how and when to “put down the map” (or book) to understand how my tangible inquiries in the garden might lead to knowing or understanding things *for myself*. The section begins with some background about the garden and the gardeners, which will serve to contextualize the other vignettes.

One of the most remarkable things about the MIP is the way it transcends and physically exceeds traditional museum concept, most profoundly through its 2.7 hectare botanical gardens (Image 38), the *Jardins du Musée International de la Parfumerie*²⁹ in the nearby town of Mouans Sartoux. The remaining vignettes examine the rich botanical and ecological encounters I experienced and observed within the garden with an underlying exploration of issues of text-boundedness (de Castell, 2009), I have critiqued throughout this dissertation. I am grateful to head gardener Christophe Mège and his assistant Dani Chofflet for their consent to be interviewed and depicted in this research and who generously accommodated my presence and questions as they worked.



Image 39: Christophe Mege; Image 40. Dani Chofflet

²⁹ Les Jardins du MIP promotional video <https://www.youtube.com/watch?v=lnU2mLvYgo>

When head gardener Christophe Mege began working in the JMIP in 2010 it was still a very young, three-year-old, garden that had only opened to the public that year. Christophe recalls his first impressions of this garden and the contrast between what he found there and what he had imagined:

I had read about this garden of scents and flowers and perfumes. I imagined something very luxurious, very generous with scents. It was a young garden but I didn't know it was that young when I came here. So, I already had in mind an adult garden. When I came to work and I saw the garden [it was] very small plants [and] quite dry. I said to myself, well, the garden was nice and it had potential, but it was just at the beginning of its life. I imagined scents and perfumes. It had to be something very sensual. I imagined an abundance of flowers, and wherever you go you see trees with branches growing. And this is what I'm trying to make. (CM interview)

By “generous” and “abundant” Christophe elaborated to me that he wanted it to be “a place to discover everything. Whenever you turn around there is something” (CM interview). But this is not only Christophe's view, as Dani told me during our interviews that the entire garden staff are highly aligned in terms of their philosophies and shared visions.

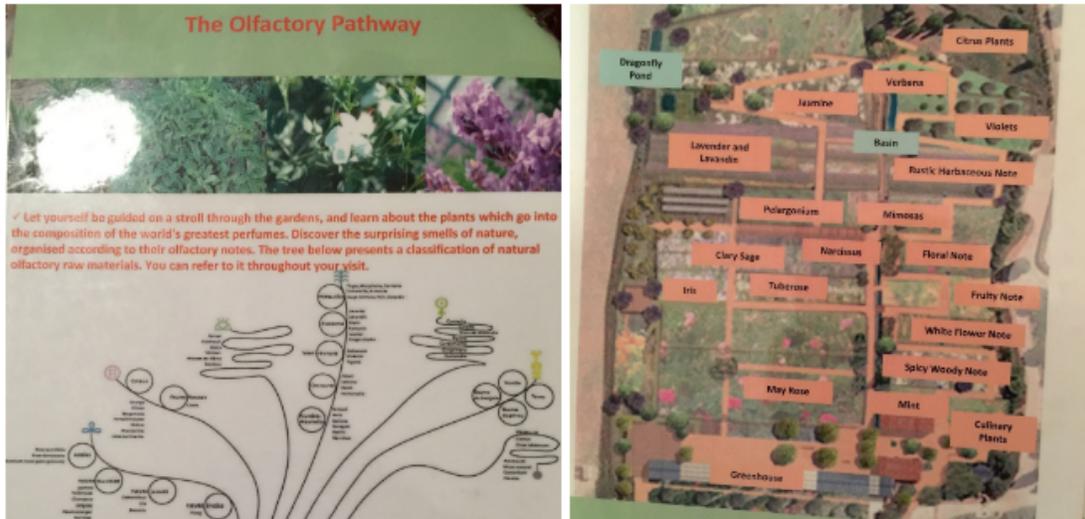


Image 41. A description of the perfumery pathway; Image 42. Laminated JMIP map.

Christophe also explained to me the development of a then purely conceptual garden, based on a perfumer's themes, into a more authentic and biodiverse ecology richly expressive of local ecologies and terroir. Among the original perfumery concepts is the 'olfactory pathway' [Image 41] that follows the theme of perfume *notes*. As Christophe explains, the earlier version of this pathway had wires preventing visitors from accessing or touching plants, much less smelling them. He describes here what the experience was like for visitors and how it inspired a redirection towards a more sensual and tactile experience:

So they [visitors] were told at the entrance 'smell the flowers,' but they couldn't go in to smell the flowers. They could only *look* and walk on this path [see Image 42]. So the first thing we did was to remove those wires and to enable people to walk in.... This is supposed to be a garden that reflects the agriculture of Grasse. So to me, that means it has to be authentic and wild, just like a field of roses might be. But you also have to give them a garden. And the garden has to be nice. (CM interview, emphasis added)

It was clear from Christophe's descriptions how such a "generous" garden does not materialize overnight, and not without a great amount of time and effort. Assistant gardener Dani

Chofflet, who arrived to work in the garden more recently, explained that the garden is quite different than the museum in terms of the nature of the environment and the kinds of work required to manage a *living* ecology. Dani noted, “we are here in a very natural surrounding” (DC interview), which involves being outdoors all day and being aware of the weather and the seasons. While these comments signal some of the environmental differences between the two locations, they also reflect a disposition to their work as a calling. In Dani’s case, as a second career, she remarked to me that gardening was her true passion and so she felt fortunate to have the opportunity to do what she already loves for a living.



Image 43. Dani preparing to work; Image 44. Shovels in the greenhouse.

Unlike my own, mostly sedentary existence as a graduate researcher sitting before a computer monitor all day, following Dani and Christophe in their work reminded me of the intensely stressed embodiments that are seasonally and ecologically contingent in terms of the impact and role that weather and environmental conditions play during their daily activities. This was brought home to me not only by my own poor fitness but also from the sunburns I acquired due to the fact I had not anticipated the time I would spend outdoors or that the April weather (which is typically rainy and cold back home) would be so sunny and hot. These circumstances reminded me of the absence of ecological considerations in the methodological training of

graduate students for research encounters and locations outside of face-to face-interviews. This also draws attention to the fact that our methodologies, focused as they are on saying rather than doing, necessarily produce research encounters that favour more passive environments over those in which participants and researchers are inter-subjectively engaged in a situated activity together. This is yet another dimension of putting down the map or book to engage with knowledge through situated mobilities of action and interaction (Pink & Leder Mackley, 2016).

This first overview of the garden, along with Christophe's recollections, is intended to provide first glimpse of the contrast between the differing contexts of aroma culture and materials at the museum and their sources within a living ecology. This next vignette also invites and necessitates very different embodiments than standalone museum exhibits due to the outdoor variables. As I will show, engaging with aroma sources in their ecological context, such as roses, rosemary or lavender, is different than the representation of these sources as aesthetic features of artifacts inside a glass case.

Tangible inquiry: 'Do touch the plants!'

The very first day I visited the garden, before I had undertaken the interviews above, Christophe accompanied me on a short walk around the garden to show me some examples of the plants that are used in perfumery. Not unlike a typical visitor to the garden, I had spent no more than 10 or 15 minutes talking to Christophe, and not yet having planned a formal interview. This first interaction was thus an unplanned encounter in which Christophe shared different things for me to touch and smell [Images 45-50]. While Pink (2012) describes a similar tour with a gardener in one of her studies, her approach, as I have discussed, with its focus on affect and subjectivity is quite different than my own in that Christophe's orientation during our tour was focused on the observable and tangible properties of the plants rather than his feelings or

thoughts about them. I describe this next vignette as a form tangible inquiry that is sensory auto-ethnographic and also semi-mediated because it involves both inter-subjective and inquiry-based explorations of the materials that can be touched, smelled and otherwise physically engaged with.



Image 45. Christophe is shown picking tiny mimosa blossoms.

As we walked, Christophe would stop and tell me about a plant or tree. In Image 45, he negotiates thorny mimosa branches to get at a blossom. He picks the flower, smells it and passes it to me to touch and sniff. I tried to take a photo of it in my hand but it was blurry. When I looked at the blurry image it reminded me of the noted challenges involved in sensory ethnographic documentation practices that can preclude the researcher's active participation (Pink, 2009). Given that this encounter was unplanned, I had not yet anticipated how to go about recording media while doing another activity with participants. Throughout the course of my research I often had to make a choice as to whether it was best for me to simply do the activity or attempt to show it. I reasoned that what I was there to do was not take photos of plants or flowers but to participate in ecologically contingent ways of knowing. For me to do as Christophe suggested, I finally had to put the camera *away*. So, I focused on recording instead. In a later

interview, Christophe explained that touching the plants as a means of understanding the garden was actively encouraged:

We tell them at the entrance, ‘*DO* touch the plants’ and rub the leaves and smell. ‘We have the right to touch?’ they ask. [We tell them] you even have the right to crush the leaf and crush the leaf. [Because] if you don’t touch the leaves you can’t smell it [laughs]. You have to tear it. Try any plants in the garden. It is something to discover. You can try to rub the leaves and smell the flowers. Sometimes it won’t smell of anything because it’s the roots. And the plant doesn’t smell of anything (CM interview)



Image 46. A collection of the items I gathered while walking through the garden with Christophe.

Image 46 shows a collection of items Christophe and I collected together during our first walk in the garden including the leaves and buds from the Bigaradier tree (the source of ‘petitgrain’ essential oil), mimosa blossom, verbena leaves, rosemary, cistus labandum (the mimosa is stuck to it), lavender and the seeds and leaves of plants I could not later identify by looking at them (a reminder that my knowledge of the garden at the time of writing this, was still

in progress and very limited). The photograph of this small sampler of aroma materials, laid across a piece of watercolor paper, is itself an example of the kind of materials and source centric documentation that can be created through tangible inquiry. Contrasting his earlier description of the olfactory pathway against the active and tangible inquiry of the same location, Christopher explains:

If you want to have a real experience you have to *touch* the plants [emphasis added]. And smell them. All different kinds of smell. Sometimes people say oh this is mint. You can smell the flowers the roses but you can't smell the smell of the petitgrain—and there are so many different plants. Even just a simple tree or plant. There's no... it's always a surprise. Maybe you take a leaf and crush it. But sometimes you crush it and then there's a smell you never smelled before. It reminds of you something. It has to be fun! (CM interview)

As Christophe notes, you cannot smell petitgrain just by getting close to the tree. It must be expressed and macerated from the buds and leaves of the orange blossom tree (*Bigaradier* as it is called in Grasse). True to this insight the leaves and buds did not have a scent until, as Christophe suggested, I tear the leaf. And there it was, the faint but bitter-sweet citrusy aroma of petitgrain.³⁰ I later took some of the leaves home to my flat to macerate them in vodka to see how much of the scent I might extract with the help of a solvent, which took several days.

³⁰ I had learned to recognize *petigrain* after playing with it in an introductory perfumery class at Fragonard in Grasse. I also purchased a small bottle from a pharmacy with a good collection of essential oils.



Images 47-49. Bigaradier blossoms; Image 50. A tiny puncture from a bigaradier thorn.

In images 47-49 I learned a slightly painful, yet incisive, lesson through a tangible inquiry with the bigaradier branches when I reached in to try and pick one of the pretty orange blossoms and got pricked by the very sharp thorns hiding amongst the large leaves. As I discovered, I could not just pick the delicate flowers of the orange blossom as the waxy petals simply fell off to the touch. After many failed attempts to pick even *one* intact flower, I realized the best method was to simply shake the branch over my hand. I later saw a photo of flower pickers gathered around a bigaradier tree, the base of which was surrounded by groundsheets. I later learned that pickers shake the flowers loose, which I had learned through accidents in knowing. Yet had I not been pricked by the thorns, I might also have been stung by one of the many bees buzzing around the tree, whose sounds are captured in some of the audio recordings I

made of myself narrating my experiences with the trees, imparting yet more field-specific knowledge, in this case, of the evolutionary role of inter-species communication.

These observations, were surprising and *meaningful* to me given that none of the descriptions I later found in perfumery literature and histories mentioned anything about the physical properties of the tree itself or the challenges involved in picking the flowers. No doubt there are likely many sources that I could consult that might have such information, but they were certainly not accessible at the time I was busy pricking my fingers. By and large, the descriptions I have found of aroma sources and materials tend to describe the aesthetic qualities of the bigradier's several aromatic products, such as bitter orange essence, *petitgrain* (produced from the leaves and buds), *fleur d'oranger* (orange blossom) and precious *neroli* (refined orange blossom) essence.

Aroma Inquiry prompt: Rubbing the rosemary

Materials needed: fresh or dried rosemary, rosemary essential oil



Image 51. Washing hands with rosemary; Image 52. Rosemary in a basket.

The following prompt is an opportunity to engage in a tangible inquiry with a living aroma resource that was inspired by my observations of the use of rosemary to teach children about the practical and medicinal qualities of the plant. The *formal* lesson they are teaching in the MIP is to understand relationships and connections between the plants and their uses. For example, that rosemary is a member of the mint family, and so it has a menthol or medicinal aroma that has antiseptic associations. The *informal* lesson is what it feels like to

do so—and the physical actions required to release the scent from the plant.

- Consider the tactile qualities of the rosemary between your fingers and on the surface of your skin. If it is fresh, try bending, twisting or tearing the sprigs. Is it soft and flexible or stiff and coarse? If it is dried, try crumbling or breaking the pieces between your fingers and then rub the material between the palms of your hand and sniff. There are differences between the dry or fresh material in terms of the residue that is left behind—it may be quite sticky or oily, similar to the *labdanum*.
- Just looking at the rosemary, how would you describe it? Does it look like any other kinds of plants or trees you have come across? What kinds? [This is a clue about its family relations]. Because rosemary is also herb used in cooking and apothecary you may also want to chew a piece in your mouth and consider the contrast between the flavour and the smell?
- You may find with the dried rosemary that you get a much richer experience from chewing than you do from smelling. In the case of fresh rosemary or essential oil, the aroma may be overpowering. How does the taste of fresh rosemary contrast with the aromas? What does it communicate about its possible uses in different contexts?

When I asked Christophe and Dani what *part* of the garden I should explore next, they told me to go to the uppermost areas of the garden because, as Christophe said, many visitors never ventured that far. As I made my way through the garden into the more overgrown areas I noted how my balance shifted walking on different types of soil, focusing not so much on the resulting sensations but their sources in the terrain and the environment. Feeling the environment as I walked is another example of tangible inquiry, as it called attention to aspects of the garden, such as the soil, that I had not otherwise been paying attention to. For example, I walked towards a small field of young lavender, I felt the change in ecology from the pathway to the field just walking onto the uneven rocky *terroir*.

During this time, I was taking recordings of myself walking, describing the experience to myself for future reference. In my recording I say things like, “the soil is dry and rocky and

bumpy and I feel the sharp edges of plants poking into the sides of my sandals shoes” (MM recording). I took the photo [Image 54] of myself sitting in the lavender rows to remind myself to write about the sensations of the sharp hard stones surrounding the lavender, which I had not anticipated when I first imagined visiting the fields of lavender in France in full bloom (likely as they do not depict the soil it grows from). Photos and audio were helpful as a means of documenting and remembering specific relationships between sensations and sources that can be lost in more *introspective* accounts that are intended to represent an experience. In my photo, the lavender shrubs are a blue-gray colour and have no flowers. They look nothing like those images you see of fields of bright purple flowers so common on postcards of Provence. I had no idea, for example, when I first visited Provence just how far north those lavender fields are, or that they do not bloom until late summer.



Image 53. Lavender in early April; Image 54. Sitting on the dry, rocky terroir.

Using my developing strategies of tangible inquiry, I examined the properties and qualities of the lavender in a deliberate way. For example, to touch, I noted that the lavender felt coarse and stiff. When I pressed against the small dome the plant barely moved to my touch. When I crushed the firm narrow leaves they made a squeaky rubbery sound. The crushed

lavender left a cool, moist and slightly oily feeling on my fingertips. And so, another directly experiential lesson that I would later learn about the processing of aromatic plants: the action, or inter-action, of maceration, that is responsible for releasing recognizable scent of lavender that affords the smelling of its sweet, citrusy-floral, slightly woody and herbal aroma. This is also a reminder that smelling is not simply a function of perception and embodiment to get one's nose to the ground but that many aroma sources require specific activities, techniques, processes and interactions in order to extract any detectable smell.

There are so many other factors, the bird sounds in the background, the heat of sunlight, the cool sensations and sounds of wind, that communicate ecological context, such as the location of the lavenders in a wide open, treeless field. As with the bigaradier, the constant buzzing of bees, swirling around the lavender, is yet another reminder of the perception of biodiversity that is *afforded* through an ecological, rather than a cognitivist, orientation towards perceiving (Gibson, 2015). For example, when I finally sat down next to the lavender, the stones were sharp and the surface of the ground uninviting and uncomfortable. It was nothing at all like I had *imagined* sitting in a field of lavender.

Analysis

Christophe's emphasis on the sensory affordance of *touch* is a tangible reminder of the interconnection between what plants *are* and the activities required to release and experience their essences. As my examples intend to illustrate, each aroma source or material requires *different* kinds of physical interactions beyond the "head over heels" (Ingold, 2013) orientations of the nose or eyes. In addition to physically moving my body, I used combinations of gross and fine motor skills, from reaching and kneeling to rubbing and crushing (or macerating, to use the technical term) with the fingertips. These tangible factors of interacting with sources *in context*

also *give context* that gets lost in translation when our only encounter with aroma is a volatilized scent, decontextualized from the varied ecological, embodied and environmental conditions that communicate meanings before and beyond the social semiotic or the neuro-sensory.

The next vignette goes further into the garden—both real and imagined—to explore some of the things I learned from my encounters with the plants and flowers I found there.

Vignette: “touch, smell, rub the flowers”



Image 55. *Rose de Mai, Jardins du MIP.*

When I first visited Grasse in early October of 2015, I was fortunate to have a smell of the few remaining Jasmine flowers, thanks to an unseasonably hot autumn. Admittedly, I had no awareness or intrinsic interest in the celebrated *rose de Mai* before I began planning my research in Grasse—in fact I had never even *heard* of it prior to reading about perfume culture—but I became increasingly more curious about the images of piled pink flowers so synonymous with Grasse. At the same time, I also wondered how their emphasis in cultural production and tourism material might also obscure or diminish some of the other botanical and agricultural features of

Grasse. While I had documented several meaningful encounters³¹ with the famed *rose de Mai* (*rosa x centifolia*) these experiences reflected more preliminary themes that were ultimately at odds with the kinds of unplanned and unexpected findings that I chose to report on, which I will return to in my conclusion and postscript.

The following interview excerpt is a transcription of a conversation I had with Christophe and Dani during a break from their work where they share their perspectives about the kinds of expectations some visitors to Grasse bring with them to the garden. I chose to feature this excerpt given its relevance to some of the more theoretical questions and that inform my study overall. It not only represents a crucial point of reflection on the tendency to view gardens as a site of sensory consumption but also highlights some of the consequences of our assumptions, expectations and beliefs on the quality and nature of what we ultimately experience or perceive in the garden. It also helps to illuminate what is otherwise possible if we put down the map—or the book (or our preconceptions)—to encounter what is right in front of our noses rather than seeking some mediation or secondary source:

Melanie: What is the first thing you'd like people to do when they come in here?

Dani: To enjoy it!

Christophe: Yes, to enjoy the garden. Touch, smell, rub the flowers.

When I later asked Christophe what generally happens when visitors arrive, he explained that they are offered laminated maps [Images 41 and 42], which are optional. When they use these maps they are most interested in the flowers. But the flowers are not always in bloom so when visitors come out of season, they often approach the gardeners to ask, “why are there no jasmine flowers?” (CM interview).

³¹ As I will discuss in the postscript, I intend to use this and other material, exceeded the themes and aims of the current study for subsequent publications.

Christophe: It is the same thing with roses. There's the text about *rose de Mai* [in the guides]. And so, when they visit the garden in April they ask, 'where are the roses? There are no flowers?'

Dani and Christophe explained that it is not *every* visitor to the garden, but it is still a common enough question and in fact one I myself might have asked had I visited the garden that first October! When I first visited Grasse, I wanted to see the roses and jasmines based on their depiction in novels and films. And this expectation leads to the challenge of finding ways to augment an environment to provide the kinds of experiences visitors want and expect. As Christophe explains:

Christophe: We try to make the fields look nice all year around. We've planted roses from the sides of the fields.

Melanie: Yes, I noticed you planted pink roses between the rows of *rose de Mai* [few of which were in bloom] and so people can see some roses when they want to?

Christophe's point is that it is important to have some *wild* and biodiverse features in addition to the agricultural, or 'farm,' concept of rows of flowers, such as those depicted in postcards of Grasse for the cultivation for perfumery. And, so they make an effort for the garden to "look nice all year around" by accompanying the seasonal May rose (which only blooms for a brief time at the end of April and barely into early June) with other, more hardy, species of rose that are in bloom throughout the spring and summer. He references the roses they planted at the sides of the fields of the *rose de Mai*.



Image 56. Rows *Rose de Mai* not yet in bloom, April 2016.

These statements reflect the efforts the JMIP's gardeners to thoughtfully and meaningfully integrate multi-seasonal trees and flowers throughout the garden so that visitors who are expecting to see flowers out of season can still have pleasant experiences even if they are too early or late for the rose or Jasmine. This becomes an opportunity, as Christophe has said, to take the aspects of the garden, such as the agricultural dimensions, and provide many different kinds of things to experience and enjoy.

Christophe and Dani's observations reflect some of the problems of having expectations of a place based on preconceptions rather than finding out what it has to offer for yourself. Reflecting on the planning of my research, I admit that I too, had these same hopes of seeing the same flowers and no doubt, might have experienced such disappointments, were it not for this kind of careful planning, and also educating.

Considering the significance of Grasse's rose and jasmine festivals in defining the town as a spring and summer tourist destination, I was curious to know what happens in winter. But

when I asked Christophe about this I immediately felt a bit silly for asking about a garden in winter and I said “wait—I probably don’t even need to ask. Because there’s nothing there. Right? I mean, what would be interesting about a garden in the wintertime?” (CM interview). To which Christophe surprised me with his reply:

Everything! Everything is interesting [in winter]. Such as the plants and flowers that bloom in winter. Especially here, where the climate is quite mild. Hyacinth, they bloom in January and February. There are flowers all year round. We could bring [visitors] to come in winter and walk around and tell them what we’re doing. How the plants are cared for. If we had a nice greenhouse we could maintain some tropical plants, like vanilla. (CM interview)

Coming from Ontario, where our average winter temperatures drop below -10 to -20 Celsius and where most plants buried under many feet of snow, winter is not a time of the year that occurs to me to visit a garden. But this is not the case for Grasse, which I might have considered had I not been so preoccupied with its most famous botanical features. I asked why the garden was not open for visitors in the winter, Christophe explained that there are lots of different ideas about what a what a garden is, and what visitors to Grasse might want, or expect, to see, and that it is important for the gardeners to find ways to balance these desires with educating about the *actual* terroir and biodiversity of Grasse.

Analysis

From a more critical standpoint, Christophe’s remarks call attention to the real-world *consequences* of acquired and preconceived ideas in shaping what and why we explore things and preventing inquiry based on a concept of “winter” or “garden” and what we think is, or ought to be, available to experience. And this is the problem with thinking we know something

about the gardens and flowers and seasons of Grasse without actually knowing or exploring those assumptions more directly – and maybe all year round. Grasse is still very much alive and well in the winter months.

When I returned to Toronto, I recalled Christophe’s remarks when I spotted some sad, gray looking snow covered lavender flowers still clinging to the branches in the frigid month of February. I recognized the lavender flowers, however transformed, and climbed up onto the embankment to pick off a few of those gray flowers and crushed them between my fingers. The lavender was cold and wet, unlike the lavender I had pressed between my fingers in Grasse, but there it was: the recognizable aroma of lavender, still communicating, even in winter. So why did I think it might not smell like anything? Why did I presume the scent would only be present in the living blooms and fully diminished or absent in these weathered remains? It was because I had not considered the possibility of finding something out for myself.



Image 57: Christophe illustrating deference to the text; Image 58. ‘expert text’

In Image 57, Christophe illustrates what he referred to as a Cartesian orientation to knowing things about plants, which is the tendency of people to want to ‘already know’ the ‘facts’ of what is ‘important’ and significant, usually from books, before you dare to touch or explore them for yourself. He communicates this by way of a multimodal gesture [Image 57] in

which he pantomimes the deference to texts. When I pointed to such an expert text [Image 58] I saw in the gift shop, I asked Christophe if he thought it would be useful for me to purchase so I might look up the names of things and find out about them, he asked why I might need such a resource, when I had the garden right there to research! (as well, it was in French). It was a good question that seemed a challenge to my own internalized Cartesian problem as a graduate student who is taught to deferring to the authority of expert texts *before* undertaking research.

Conclusion

As I have argued throughout the dissertation, and in this chapter, the meaning or significance of sources and materials is often engaged as a property of authorized fields, texts or their reproduction (Bourdieu & Passeron, 1977) into specialist terminology, practices, techniques and instruments. Rather than instigating or scaffolding ways of knowing through doing, or inquiry, our deference to domain-specific knowledges can more often serve to decontextualize and abstract experiences and phenomena from their sociocultural, spatio-temporal and ecological locations and contingencies.

The activity of engaging with the sensory affordances of living aroma sources outdoors involves actions and interactions, with parts of a plant, such as the leaves, blossoms or branches, involves physical embodiments that are ecologically contingent—whether kneeling to sniff lavender or reaching to pick an orange blossom (and pricking my fingers). Each of my vignettes draws attention to the embodied, ecological, environmental, and also structural contingencies that afford observing and interacting with aroma materials and sources. This reflects the prioritizing of source and context *over* introspection and sensorial effects. Furthermore, from a critical standpoint these examples not only de-link aroma sources from paradigms of sensory perception but also re-link experience with situated context(s). It is a call to context to aroma

sources and materials. We can still enjoy their smells and use these perceptual models of smell to learn but that is a way of thinking that is already well established and supported.

As a researcher in the social sciences, whose scholarly training has almost exclusively focused on the documentation and analysis of *texts* (including some multimedia texts), I had no specific training about conducting outdoor research or even how to go about including details of weather, terrain, plants, animals or other phenomena that are extra-social. My choice of sensory ethnography seemed a way of accounting for details of place, weather and ambiances along with my own experiences of those phenomena, as a means of investigating the ecological contingencies that influence what is otherwise discussed through introspective or reflexive strategies of meaning making after-the-fact. From ecological orientation to perceiving in context, this is akin to what James Gibson terms “naive realism” (Gibson, 2013), which is a movement away from the idea of perceiving as a purely mental and sensory activity to understanding of the material affordances of environments, substances and surfaces that are engaged through action and interaction. Turning back to my theoretical foundations, this is also especially compatible with the more structuralist orientation that attends to forces and structures that exist outside of an individual actor (or perceiver). Even the possibility of accessing these materials involves the privilege to get to them along with adherence to the rules or structures (such as permission to touch the plants) that permit (or prevent) the activity of smelling, touching and sensing, beyond their phenomenological ‘experience.’ Furthermore, from a critical standpoint these examples not only de-link aroma sources from paradigms of sensory perception but also re-link experience with situated context(s). It is a call to context to aroma sources and materials.

Conclusion

“In the beginner’s mind there are many possibilities, but in the expert’s mind there are few”

– Shunryu Suzuki, *Zen Mind, Beginner’s Mind*

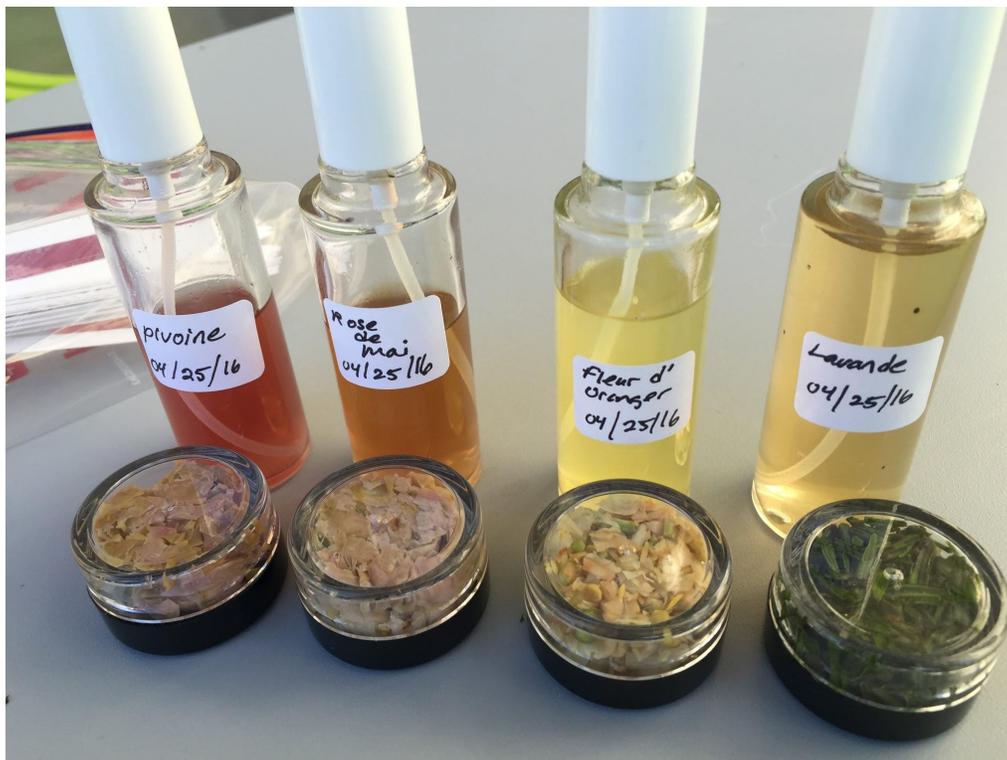


Image 59. ‘Simple’ perfumes made from macerated fresh flowers and vodka.

As I have argued throughout this dissertation, smell is often discursively framed in deficit-driven and ocularcentric frames of invisibility, which capitalizes on the semantic imprecision of the word smell to emphasize the mental and molecular, over the ecological and material, basis of perceiving and understanding smell and the sources of odours. While all of these models and are crucial to a functional understanding of chemosensory perception, they do not attend to the more observable and tangible physical properties and qualities of aroma *materials* and odour *sources* on the other end of our noses. As my study has shown, this understanding involves a more ecological orientation to perception (Gibson, 2015; Ingold, 2011a) to engage with neglected considerations of place and space (Henshaw, 2013; McLean, 2018), structural and ideological

forces (Winner, 1986), sociocultural intersectionalities (Rhys-Taylor, 2010, 2013), and environmental and spatiotemporal contingencies (Gibson, 2015; Ingold, 2011a) that ‘afford’ *how*, *when*, *where*, with *whom* these materials or sources are accessed or corporeally engaged (McBride & Nolan, 2018) through the physical activity of sniffing (Horowitz, 2016) them.

While there is a growing body of work in the arts, humanities and, to a lesser degree, social sciences, that is focused on the historical and material dimensions of aroma and smell cultures as aesthetic, lived and emotional *experiences*, these perspectives, while valuable, often maintain a mind over matter, or else, wholly phenomenological, relation with aroma sources and materials. In my literature review and theoretical foundations, I suggested that older disciplinary antagonisms between the social sciences, humanities and sciences has contributed to assigning these more *applied* and *experimental* dimensions of researching sources and materials to the sciences, or else they have been secreted away within traditionally exclusive domains of *practice*, such as perfumery. Furthermore, I contend that this ocularcentric framing not only reinforces an increasingly neurocentric, mind over matter, *sensory order* (Howes, 2005), but also maintains the visual biases of contemporary information and communication cultures.

Through a site-specific study of scent-rich ecologies, interactions and environments within the *Musée International de la Parfumerie* in the town of Grasse and the gardens of the *Jardins du Musée International de la Parfumerie* in Mouans Sartoux, I investigated the ecological contingencies and multimodal affordances of aroma materials in the contexts of scaffolded mediation and tangible inquiry. This involved a combined qualitative methodology of sensory ethnography, auto-ethnography, multimodal analysis and my own ‘tangible inquiry’ to examine the nature, selection, exploration and use of botanical and synthetic aroma materials as

tangible and multimodal resources for inter-subjective and site-specific mediations and self-directed *inquiries* within cultural and ecological contexts.

This dissertation has demonstrated why, and how, to reconnect smell with source while de-linking aroma from traditionally abstracted representational knowledges and commercial influences to emphasize, instead, the environmental, ecological and structural forces that afford the physically and environmentally-situated activity of smelling. This dissertation, accordingly, issues a ‘call to sensory context’ that engages with intersensory and multimodal knowledge, in the context of smell, as a form of inquiry, grounded in ways of investigating, learning, and doing. This involves approaches that are critical, practical, playful, but also, responsive to, and situated within, the living sociocultural, agricultural, and material ecologies in which they are both constituted and encountered. More practically, I have demonstrated how, and why, to understand not only the functional, but also, the structural, extra-social and ecological contingencies upon which the perception of smell depends, such as the atmospheres, environments, and materials, that contribute to, and constitute, grounded and situated approaches to aroma as a multimodal resource for learning, literacy and communication.

Turning to the implications, challenges and limitations of my study through reflexive summaries of two site specific chapters, starting with reflections on my outsider positionality and political dimensions of a source-focused aroma inquiry in a location where perfume is primarily framed as an aesthetic, cultural and social object. This is followed with a summary of the scholarly and applied contributions of this study for the fields of communications and education. This chapter is followed by a postscript of significant developments that exceeded the current study, such as my Aroma Inquiry lab, and the ways I have already mobilized the knowledge generated by this study in talks and workshops for the public and industry professionals.

Challenges

1. Grasse: Delinking aroma from the politics of perfume

The idea that Grasse has “acquired an international reputation” as a “World Capital of Perfume” (Rosati-Marzetti, 2015, p. 25) through the highly-coordinated efforts of local stakeholders, including councilors, tourism and fragrance industry professionals and business organizations raises important questions about the underlying interests and motivations that are sometimes concealed in projects involving cultural heritage. While I became keenly aware of the influence of the commercial fragrance industry in its framing Grasse’s past and present in accordance with its own interests, I also noted that these interests were often contrary to those of residents, cultural workers, educators, small businesses and, especially, natural perfumers. While still a remarkable one-stop-shop for all things perfumery, and home to many companies producing these materials, Grasse is also a crucially important location for learning about and exploring aroma *in context*.

Given that I had already conducted a small fieldwork trip prior to undertaking this study, I was also aware of the challenges involved in attempting to explore aroma without the blessings of an ever-present fragrance industry that is aggressively invested in maintaining its preferred narratives. This was especially evident in some of the responses to my research themes from some of the commercial fragrance professionals I encountered, such as my interest in raw and natural materials, which is an inconvenient, and also incendiary, topic for a global fragrance industry that relies almost entirely on petrochemicals, many of which are known to be toxic (Bleifuss, 2015; Saponara & Whelan, 2015). For these reasons, I was increasingly ambivalent about engaging with the theme of perfume even though I found many friends and allies in Grasse

who not only shared my perspectives but had been directly harmed³² by the fragrance industry. As I learned more about the kinds of aroma-themed cultural activities and projects being featured in locations around the world, I often noted the influence and reach of the fragrance industry discursively embedded in seemingly neutral scientific or historical facts celebrating the modern advances of chemistry, while reinforcing the idea that natural and herbal materials were very much a thing of the past. As I researched fragrance culture more generally, I began to note that the same commercial perfumers and industry-friendly speakers were being featured in aroma-themed events and projects by publically-funded institutions, such as museums and galleries—spaces traditionally functioning to provide a space free of commercial interests and for the contemplation and critical engagement of culture.

Moreover, and as I have noted in my literature review, I often came across the mantra that mass-produced and proprietary synthetic aroma molecules increased the range of artistic choices available to the perfumer/fragrancer. While an investigation into the politics of the fragrance industry exceeded the scope of my study, I recognized many similarities in the tactics of Big Fragrance and those of Big Food. Like the global food industry, multinational fragrance and flavour industries are similarly invested in undermining sociocultural knowledge practices as Michael Pollan (2001) argues in his book *Cooked*:

Corporations cook very differently from how people do (which is why we usually call what they do “food processing” instead of cooking)... What have been called the ‘cultural contradictions of capitalism’—its tendency to undermine the stabilizing social forms it depends on—are on vivid display today at the modern American dinner table,

³² During my research, some of my informants anonymously disclosed information to me about the dangerous working conditions in some of the large-scale, multinational fragrance companies.

along with all the brightly colored packages that the food industry has managed to plant there. (p. 8)

Similarly, Big Fragrance marketers work tirelessly to decontextualize scents from source, dismissing consumer concerns as a scientific ignorance or romantic pastoralism. But it makes good sense for products that are not driven by *terroir*, but materials and processes of dubious origin, to be carefully concealed with a culture that is notoriously secretive (Turin, 2007).

Unlike the complexity, depth and textures of natural aroma materials (Aftel, 2014), synthetic aromachemicals (Turin, 2007) are devoid of the kinds of inconsistent or unstable properties expressive of provenance and context. Returning to Langdon Winner's (1986) compatibilities framework once more, it is curious then, to note how some scholarly theorizations of phenomena, serve to reinforce and reproduce the very same semiotic and affective use values of smell that are so efficiently mobilized by a fragrance industry that works to keep empirical sensory literacies "at bay" (de Castell, 2009).

2. Findings in review

Given my stated orientation to informal learning in public, rather than private, environments, I chose research sites that were rich and varied in their affordances for inquiry with an emphasis on participants and locations who were accessible to the public. This was as opposed to hard to reach experts (such as perfumers) and locations that are off limits to anyone without a formal introduction or other valued credentials.

My own position is that the public needs access to practical and critical literacies that begin with our own situated needs and interests to gain a more grounded understanding of aroma sources *in context* as a means of cutting through sensory hype and simulacra. In the course of my ongoing research, I have encountered and observed many such contexts of highly skilled and

applied sensorial knowledge across many different domains—from the self-taught and the artisanal to professionals, such as world-class sommeliers and wine scientists, who not only understood their materials but are distinguished in their physical acuity of assessing and evaluating specific aroma compounds (along with other physical characteristics). I began this research as an outsider, and this was the perspective I was researching—that of the beginner. However, my project was not a critical examination of the *cultural production* of smell, perfume or tourism in Grasse, but an investigation of what it means to learn *through* and with *aroma*, in *relation* to both the culture and history, but also the origins and ecologies that constitute them. But this may be easier said than done, as I myself found when I had to advocate on behalf of my own research goals in a cultural context where access to subject matter experts and legitimate (Bourdieu, 1984) knowledges reproduces (Bourdieu & Passeron, 1977) structures of experts and novices to which a student such as myself is expected to defer.

Research praxis

While the aims and contexts of cultural mediation are quite different than those of school teachers, the guides at the MIP often characterized their disposition in terms that are quite similar to what educator and scholar bell hooks (1991) describes as engaged pedagogy, “where teachers must be actively committed to a process of self-actualization that promotes their own well-being if they are to teach in a manner that empowers students” (hooks, 1994, p. 14). During my research and time spent with participants, several of them discussed the role of ‘well-being’ and healing in their own day-to-day lives, which was clearly embodied in their engaged commitments to the inclusion and well-being of the public. Like the public educator’s commitment to do-no-harm, this is a very different orientation towards people as publics quite distinct from commercial or institutional relations that reduce publics to consumers or audiences

who are engaged in transaction rather than transformation. This reflects, again, a disposition and orientation of engaged pedagogy, as hooks explains:

when education is a practice of freedom, students are not the only ones who are asked to share, to confess. Engaged pedagogy does not seek simply to empower students. Any classroom that employs a holistic model of learning will also be a place where teachers grow, and are empowered by the process. (hooks, 1994, p. 21)

While there is a role for expertise, a truly inclusive curriculum with room for unknowable and unexpected outcomes, transgression, resistance and Do-It-Yourself opportunities necessarily comes from margins, rather than the centre, of sensory cultures—which includes not only marginalized social locations but also the ecological, and extra-social dimensions of a world we share with plants, animals and other living phenomena.

Limitations

For me, the most obvious limitation in this work is my outsider status in relation to the sciences. As an outsider, it was sometimes a limitation to lack even a basic scientific grasp of terminology and concepts required to engage with smell, in particular. At the same time, my ignorance (Ranciere, 1991) of these fields also inspired some of my earliest questions, such as how much a non-expert, outsider to these domains could learn in a short timeframe. While I was able to undertake almost all of the activities I had set out to do, such as documenting perfumery workshops, visiting production facilities and smell walking and mapping, I also found myself with too many stories for a single dissertation.

However valuable it was to have privileged access to many hard to reach individuals and sites, some of these visits and interviews also involved considerable time and planning and, in the case of commercial sites, highly prohibitive restrictions about what I was permitted to record.

For example, at one site I was required to leave my phone in a storage facility and sign a document indicating that I would not share anything I saw or heard while at the site—which of course rendered everything I saw there unavailable for analysis. At some of the fragrance manufacturing facilities I visited there were other limitations, such as not being permitted to use video or record audio. These were serious constraints given my methodological and theoretical aims to use rich media to document participatory encounters involving doing rather than saying.

Yet I was similarly constrained by the sensory and multimodal methodologies that further reinforced the subjective and social over the ecological. To this end, my improvisation of a methodological intervention in the form of tangible inquiry and my inclusion of smell and aroma inquiry prompts are intended to provide an experiential counterpoint to the limitations associated with auto-ethnographic reports. However inter-subjective or transformative my orientations are, in theory, I was finally also aware of the shortcomings of inquiry-based, self-directed and Do-It-Yourself learning in the absence of accountabilities to the kinds of structural questions or bracketing. As Jenson, Dahya and Fisher (2014) argue, there is a difference “between the ideal circumstances for DIY production and the more practical realities that are encountered on the ground” (p. 174), which is especially applicable to engaging with the practical realities of making things with aroma materials; and which I return to in my postscript.

Finally, as I noted, language was not a significant barrier for a study that is explicitly oriented to researching doing over saying, and phenomena over texts about those phenomena, and an emphasis on the documentation of activities rather than utterances. The fact that I am not fluent in French certainly limited my interactions involving semantic and semiotic nuances or informational sources represented through speech and text rather than the demonstration or physical interaction with ecological or material objects and procedures. While these limitations

are also produced by scholarly formats that prioritize linguistic units of analysis over phenomenal ones the aim of my study—to focus on extra social and ecological phenomena using methodologies that privilege *doings* over *sayings*—intended to intervene on these limitations by drawing attention to forms of nuance and meaning beyond social semantic.

Unhiding the hidden curriculum of aroma culture

Touching on my prior work on the “hidden curriculum” of smell (McBride & Nolan, 2018), my study intervenes on aroma as culturally acquired and representational knowledge forms, particularly in the form of expert narratives, classificatory systems, terminology or techniques. I show how acquired and representational knowledge often serves to obscure, impede and actually interfere with, the possibility of a more ecologically and socioculturally situated and direct encounter with aroma sources, materials and contexts where there is the possibility to *make* sense of aroma as an *active* encounter with phenomena. Yet behind every explicit curriculum is a *hidden* curriculum “which refers to institutionally valued, but concealed, power relations, beliefs, norms and dispositions required for success in traditional structures of education” (McBride & Nolan, 2018). Rather than documenting systematic and prescribed techniques of experts such as perfumers, such as those I referenced in my literature review, I built on sensory methodologies such as sensory ethnography (Pink, 2009; 2015) and embodied practices of “smellwalking” and “smell mapping” (Henshaw, 2013; McLean, 2018) that I had examined in my preliminary fieldwork, to consider the methodological interventions I needed to examine different questions about the contingencies of smelling on the highly tangible dimensions of aroma materials and sources. I was interested in the practical realities of how it is people skillfully and intentionally engaging with these physical and concrete dimensions of engaging with aroma.

To this end, my choice of sensory ethnography (Pink, 2009) assisted me in accounting for phenomena, as a means of investigating the ecological contingencies that influence what is otherwise discussed through introspective or reflexive strategies of meaning-making after-the-fact. From ecological orientation to perceiving in context, this is similar to what James Gibson terms naive realism (Gibson, 2013), which is movement away from the idea of perceiving as a process drawing on prior experiences towards an understanding of the material affordances of environments, substances and surfaces that are often independent of, and often prior to, a perceiver. Horowitz (2016) has noted, getting one's nose to the ground often involves literally getting down on one's hands and knees to physically engage with ecologically situated aroma sources that bring smell back *down to earth*.

This study has addressed itself to gaps in our understanding of aroma sources and materials, apart from their semiotic and scientific use values along with revisiting the modal affordance (Kress 2013; Jewitt 2009) more faithfully to Gibson's original and ecological conceptualization of this term. As I have argued in my theoretical foundations and through my findings, this study also offers an interrogation of framing extra social and ecological phenomena through anthropocentric ontologies and perceptual paradigms. In the context of smell research, this study intervenes on the over-determination of psychological, and increasingly neuro-centric, conceptualizations of smell and the senses, independent of crucial sociocultural, structural and ecological context and interdependencies.

As I have shown, my interventions on neurocentric sensory paradigms also have methodological implications for multimodality, which, I argue, reinforces the same "hylomorphic" (Simondon, 2005) (or, mind over matter) models that underwrite theorizations of

material culture as the “unification of stuff supplied by nature with the conceptual representations of a received cultural tradition” (Ingold, 2013, p. 20).

I have argued that smell constitutes a missing modality for the fields of communications, media and education. Through this research, I sought to address this and other gaps through my findings and methodological interventions of logocentric knowledge and information paradigms. Given that smell culture (Drobnick, 2006) is itself a highly emergent and definitively transdisciplinary field of inquiry, this study also contributes an introduction to some of the work and perspectives of scholars and practitioners in an emerging domain to researchers in communications, media studies and education. Building on my outlined theoretical foundations, which background my commitments as an educator and approaches to scholarship, I have also sought to articulate a more ecologically (Gibson, 2015), situated and also accountable (Haraway, 1998; de Castell, 2015) and reflexive approach that reconsiders the ‘facticity’ of what counts as information (Gitleman, 2006). From a critical sociocultural perspective, my work constitutes a call to context that seeks to account for the “sensitive interfaces” (Cockburn, 1997) between technologies, the senses, and the ecological and sociocultural contexts that constitute them and our experiences with them.

Contributions

This dissertation addresses a gap in understandings of aroma sources and materials that afford the activity of smelling as environmentally and ecologically contingent, multimodal resources for knowing, learning and doing different kinds of things that compliments, but also intervenes on the over-determination of symbolic, affective and interior use-values of smell and the senses. In the process of researching different approaches to aroma as a resource of scent-themed activities, mediations, practices and environments, my methodological improvisation of

tangible inquiry serves to account for ecological and environmental contingencies that often go missing from grounded research projects in situated contexts.

Implications for future research

In the absence of grounded, ecologically-contingent and source-centric research of aroma as a multimodal affordance for learning, communicating and making in the Canadian context, this dissertation offers an initial theoretical, methodological and research-informed foundation for future research. As I will discuss in my postscript, my own work is moving towards the development of accessible, inclusive and ‘Do-It-Yourself’ (DIY) extensions of my tangible inquiry to focus increasingly on forms of making involving the cultivation and processing of aromatic plants, the composition of different kinds of aroma materials, and more holistic approaches to using aroma as modal affordance for designed interactions.

This concluding chapter is followed by a postscript in order to outline some of the significant developments in my work that ran parallel to my doctoral research. In the postscript, I will describe some of the most significant outcomes my research findings and how I have already mobilized my dissertation research to benefit students, the public and also industry professionals who have attended the workshop I developed out of my doctoral studies.

Final thoughts

Throughout this study, I have considered the selection and use of aroma as a resource of scent-themed activities, mediations, practices and environments and improvised the methodological intervention of tangible inquiry as a means of accounting for ecological and extra-social dimensions of phenomena that are otherwise deemed the property of the sciences. These approaches attempt to reconcile the apparent disavowal, not only of data, but also of functional scientific and applied approaches to phenomena with the crucial importance of empirical approaches to observation, experiment or measurement that are not necessarily tied to

institutional models. The idea that “reality exists” (Oakley, 2000, p. 323) thus simultaneously acknowledges of the “validity” (Lather, 1995) of many other forms of evidence to ask:

Why do we acknowledge only our textual sources, but not the ground we walk, the ever-changing skies, mountains and rivers, rocks and trees, the houses we inhabit and the tools we use, not to mention the innumerable companions, both nonhuman and fellow humans, with which we share our lives? (Ingold, 2011a, xii)

Indeed, in order to similarly account for, and reconcile, the volatile, yet ecologically situated, dimensions of smell beyond symbolic and affective use-values, fields of communication, media and education must redefine the evidentiary basis of what is regarded as a legitimate form of knowledge and also the facticity of what counts as a record, document, utterance or form of data (Gitelman, 2006) *beyond the word*. Building on these perspectives, interventions and approaches, the findings from this study attempt to redress the apparent invisibility and immateriality of the missing modality of smell, through grounded examples of knowing, doing and saying things with aroma sources and materials.

Postscript: Introducing the Aroma Inquiry lab



Images 60: The first 'smell lab' was an electronics workstation with a vent hood;
Image 61: The current Aroma Inquiry lab.

In this postscript, I detail some of the significant outcomes and mobilizations that have emerged from my doctoral research. The most important is the founding of my *Aroma Inquiry Lab* at Ryerson University's Responsive Ecologies Lab. The Aroma Inquiry Lab is the first and only one of its kind in Canada to focus specifically on the critical selection and use of aroma materials for inquiry-based learning, doing and making, rather than focusing on sensory sciences or anthropology of the senses. Drawing on my research, the lab is oriented to active, critical, ecological and inclusive inquiry, involving the use and cultivation of aromatic plants, the processing and composition of aroma materials, and designing interactions that engage with aroma as a modal affordance of and for learning and making. To this end, I have already mobilized my research through class visits, workshops and talks I have developed and undertaken, as first steps to implement the critical aims and goals that will guide my research over the next five years.

Aroma: A privileged curriculum

When I first visited Grasse, one of my early research questions was concerned with how much could a non-expert and outsider to aroma culture learn in span of time of an introductory perfume-making session or a visit to an aroma museum or garden? I was eager to take a perfumery class, not because I was interested in composing a perfume, but because I wanted access to materials, such as oakmoss, orris root, labdanum and civet, that I had heard of but had no way of smelling or acquiring. The chance to possibly smell, touch and examine some of the aromas in the perfumer's organ was my goal. Even on this first visit of only a few hours, it appeared that a lot more learning was possible when the goal is inquiry, rather than mastery.



Figure 62 & 63. Creating fragrances at Galimard and Fragonard introductory perfume workshops.

I finally had the opportunity to sniff my way through such materials in an ‘apprentice’ perfumer’s workshop at Fragonard, taught in English by local cultural mediator Diane Saurat-Rognoni³³, who later became a key observer in my study providing important background information about these workshops and about Grasse in general. Diane helped set the tone for my time in Grasse reminding me that subject matter expertise has little value without a disposition towards inclusion.

³³ See <https://www.youtube.com/watch?v=jNPK3TXXoTY>

Upon entering the atelier³⁴ I noted the perfumer's organ (desk full of aromas) that we would presumably get to explore. However, this workshop focused on using just nine fragrance ingredients to create a simple *Eau de Cologne*, not unlike that described in the memory workshop and the 4711 smell prompt. After retaking this workshop, I realized it was difficult enough to practice with just these few ingredients in order to understand the nature of each essence and how they combined. Meaningful as it was to try my hand at fragrance composition, I was drawn to the bottles on the perfumer's organ and I begged Diane if I could smell just two. She asked which ones and I told her "I want to smell the most unusual! Something I couldn't easily find in a shop" She gave me castoreum and civet, warning me that I might find them unpleasant. They were 'poopy' and animalic but in the most fascinating ways, and I took in their scent with the utmost attention, assuming I might never have the chance to smell them again. Along with my encounter with cistus labdanum, this moment galvanized my conviction that my real focus was materials-centric, and not simply the experiential aspects of sensing or smelling.

After taking similar workshops at Galimard and Molinard, I left Grasse with several fragrances I had created; an *Eau de Cologne*, *Eau de Parfum* and a perfume. I also had opportunities to create a simple *parfum* from plants in the JMIP and participate in a small workshop on perfume composition for children in the museum. I left with over a dozen fragrances of my own creation. I gained important insights from these experiences that shaped and contributed to the stories I was able to include, even though I was unable to document these activities in the dissertation due to limitations of the data I could record at these sites.

Also missing from my dissertation, were visits to some of the flower farms and factories where they still use traditional methods of extraction and distillation, such as Grasse's historic

³⁴ In this context, *atelier* refers to a designed classroom or workshop for perfumery creation.

Gazignaire,³⁵ which is one of the town's oldest and most respected producers of fine natural aroma materials. I had the opportunity to see and smell perfumery ingredients, such as tonka bean, vanilla bourbon, coumarin, cepes (mushroom) and floral waters, such as rose and orange blossom, being processed in their plant. I was also very fortunate to be received at Payan Bertrand³⁶, another of the oldest and most respected producers of fine raw perfumery materials, where I obtained precious samples of orris root and orris butter that I featured in the Aroma Inquiry kits I prepared for my committee. While these visits to Gazignaire and Payan Bertrand could not be included in my dissertation research, due to their privacy restrictions, they were enormously helpful in providing me with first-hand knowledge of the time, processing, labour and *savoir-faire* that goes into the transformation of natural raw materials and why they are necessarily more costly than their synthetic counterparts.

Through these side trips, I saw that the cultivation and processing of flower- and plant-based fragrance materials in Grasse was very much alive and well, and not, as some fragrance writers would have us believe, lost in the archives of museums. Watching a video on a technician's phone of an old film of his mother picking Jasmine in the flower fields was also a reminder that these "gnomes of Grasse" (Turin & Sanchez, 2009) are actual people, with families and names and histories. For example, while visiting a rose farm I was shown how to twist the *Rose de Mai* off the stem and to listen for the 'click,' learning a technique that has been passed along through generations finding its way to my own fingertips. The fragrance manufacturing facilities I visited in Grasse, staffed with professionals whose families had worked for these companies for several generations, represent traditional models of production, such as steam distillation, that the chemical industrial complex are keen to dismiss.

³⁵ <http://www.gazignaire.com/en/>

³⁶ <http://www.payanbertrand.com/>

Experiments in knowing

Building on the findings of this ecologically-situated and source-centric dissertation, I am creating a foundation for the development of accessible, inclusive and ‘Do-It-Yourself’ (DIY) approaches to exploring, learning and making with aroma in the development of my ‘Aroma Inquiry Lab’. As a former public school teacher, I am drawing on my educational background to translate many of the more technical and scholarly approaches I explored in my research into more accessible and engaging formats suitable to diverse participants—from undergraduates to industry professionals. The Aroma Inquiry Lab fulfills the need for a practical, source-centric and ecologically-contextual approach to aroma inquiry, and contributes to the development of an original and creative redirection for multimodal learning and making.

Recently, the Responsive Ecologies Lab has provided a better workspace and more advanced equipment (a soxhlet extractor, Pyrex beakers, etc.) and aroma materials, my first ‘kit’ consisted mason jars, ziplock bags and essential oils, spices and other materials I purchased from Toronto’s Kensington Market. I began this first iteration using the most inexpensive materials I could find as a means of creating a space that was not founded on the requirement of high-end equipment or materials. These early “experiments in knowing” (Oakley, 2000) led to applied practices of aroma making tinctures, bitters, oleoresins, solid perfumes and balms using mostly natural materials.



Figure 64. Dried raw materials and processed resins, apothecary and fragrance

While frankincense and labdanum may be significant and important for the mediation of traditional fragrance culture from a European standpoint, I was interested in understanding how this translates into Canadian contexts, using locally sourced resources. Since my return from Grasse, I have ‘wild harvested’ Spruce sap from Northern Ontario using DIY instructions with help from local wild crafter and apothecary Dan Riegler (2014). With these and other materials I began to acquire, I explored different techniques of macerating, extracting and using aroma as modal affordance for designed interactions. I made solid perfumes, and edible concoctions, such as bitters, using ‘how to’ books on natural fragrance and flavour composition (Aftel, 2005; 2014).

By and large, many maker labs being established in schools and universities focus on electronics and crafts, oriented to the development of production skills. These models still privilege a highly technological notion of making that neglects a concern with the selection or nature of the resources that are based on their organic and ecological properties and origins.

Olfactory arts-focused spaces are emerging around the world, few of these projects move beyond aesthetic or experiential aims to address or account for critical pedagogical questions about the differences between the “ideal circumstances for DIY production and the more practical realities that are encountered on the ground” (Jenson, Dahya & Fisher, 2014, p. 174).

The curriculum and pedagogy I am developing for the Aroma Inquiry lab explicitly and directly addresses the realities and barriers to learning and making with aroma, including matters of well being, sociocultural intersectionalities of inclusion, and the often taken-for-granted privileges of time, literacies and access to often costly materials and infrastructure required for such a resource-heavy modality. As I have outlined in this dissertation, this also involves attending to structural, material, ecological and sociocultural forces that can either afford or preclude the activity of smelling. These more critical orientations offer a viable starting point to understand the nature, role and use of aroma materials in different contexts, along with the many contingencies that afford their inquiry. From the standpoint of communications and digital literacy, this includes opportunities for critical media literacy and analysis of the political and cultural economies of networked fragrance cultures. In the absence of a critical consciousness, even the most intrinsic curiosity or feeling for aroma is easily diminished or instrumentalized within a culture we ourselves had no hand (or nose) in creating.



Figure 65. Colourful tinctures.

Mobilizing aroma inquiries to talk back to dominant paradigms

One of the most exciting outcomes that emerged from my research is the opportunity to provide students in different fields and backgrounds, with the opportunity to create their own learning resources based on the self-directed learning practices I have advanced in this dissertation. For example, in my workshops with wine education students, the Aroma Inquiry Lab contributed an active, source-specific supplement to practices of sensory evaluation that are based on the rote memorization of specialized terminologies rather than physical knowledge or interaction with of aroma sources. My approach is not about memorizing descriptors from grids or sniffing at bottles, but engaging with varied aroma materials to emphasize their properties, qualities and attributes at a physical and tangible level. My workshops have contributed to the development of aroma literacies by providing access to resources that many of these students have limited access to.

Finally, the Aroma Inquiry Lab is a means of encouraging the development of curriculum and pedagogy quite unlike the sensory edutainment events initiated by fragrance industry consultants or marketers, whose presentations in schools and universities constitute a form of viral marketing. Like many other corporate interests who seek access to students (who are quite literally *captive* audiences), there are ethical issues around the freedom of students to critique or resist such interests. This scenario is, however, quite unlike other approaches to ‘industry,’ that involve applied and experiential learning opportunities with researchers, scientists, technicians, skilled trades persons or independent artist-practitioners who are explicitly committed to ethical and also *critically reflexive* pedagogy independent of corporate interests. Accordingly, the Aroma Inquiry Lab represents an alternative smell or aroma edutainment linked to brands and marketing, where researchers and learners are encouraged to question and “talk back” (hooks,

1992) to corporate interests. The Aroma Inquiry Lab constitutes an unique environment for *research praxis* founded on principles and practices of critical literacy, equity, diversity and inclusion. I have raised questions about what counts as aroma knowledge, and also who counts as a ‘knower,’ and have proposed other ways to think about how we go about acquiring and constituting this knowledge beyond commercially defined notions of expertise.

To this end, my research plan for the next five years aims to further develop a foundation for other ecologically, socioculturally and critically oriented environments that will support the development of accessible and DIY curriculum and pedagogy using locally sourced or socioculturally relevant resources that are initiated, instigated and funded in accordance with the needs, goals and interests of non-dominant groups or individuals, rather than *on their behalf*.

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Appendix A: Sources



Image 66. Materials featured in the inquiry prompts.

Apart from dried raw orris root,³⁷ most of the aroma sources and materials featured in this dissertation are easily obtained from online sources. More common essences, such as lavender, vetiver and rosemary, are often sold in independent health food stores or health-focused grocery chains such as Whole Foods. Aroma materials such as neroli, jasmine absolute and orris concrete will be costlier to acquire. I have indicated where to find the specific aroma materials referenced in this dissertation, below. In some cases, such as jasmine and neroli, can be purchased as *samplers*.

The list provided below provides sources for aroma materials featured in this dissertation and so it is by no means comprehensive.

³⁷ Some of the materials described in my dissertation were obtained from production facilities in Grasse, such as Gazignaire [<http://www.gazignaire.com/en/>] and Payan Bertrand [<http://www.payanbertrand.com>] that manufacture at an industrial, rather than consumer, scale.

Sources

Aftelier

Source for: Jasmine absolute, labdanum absolute, perfumer's isolates and compounds
The online shop of natural perfumer Mandy Aftel offers fine, one-of-a-kind, aroma materials, chef's essences and educational resources, such as Aftel's own books, courses and kits for learning perfume: <http://www.aftelier.com/category-s/1839.htm>

Eden botanicals

Source for: orris concrete, labdanum resin, jasmine, vetiver, etc.
A high quality source of natural aroma materials, including some hard-to-find items. Make sure to read their extensive information about shipping surcharges. Eden Botanicals provide Material Safety Data Sheets (MSDS) for their products:
<http://www.edenbotanicals.com/products.html>
<http://www.edenbotanicals.com/eden-botanicals-ordering-info.html>

New Directions

Source for: lavender, vetiver and other essential oils
New Directions online sells inexpensive aroma materials, of variable quality, including synthetics. They also provide Material Safety Data Sheets (MSDS) information for most of their products: <https://www.newdirectionsaromatics.ca/>

Apothecary's Garden

Source for: Frankincense
Ontario-based wildcrafter and apothecary Dan Riegler regularly travels across the world to acquire incense, resins and ancient aroma materials. You can find frankincense and many other curiosities at his online Etsy shop: <https://www.etsy.com/ca/shop/ApothecarysGarden>

Fragrances

Source for: '*Musc Marjorie*' (*Marjorie's musk*)
The dissertation opens with a smell prompt of a perfume dedicated to my grandmother, Marjorie. '*Musc Marjorie*' (*Marjorie's Musk*) is inspired by one of her favourite perfumes, *Shalimar*, composed from both natural and synthetic materials. A full list of the notes of *Musc Marjorie* is included in the appendix. It can be ordered directly from Galimard using the serial number: 105 440 <http://www.galimard.com/index.php/en/online-boutique/votre-creation-studio-des-fragrances.html>

Sources for: 4711

In Chapter four I reference classic *Eau de Colognes* such as 4711 and *Roger & Gallet*, both of which can be purchased in many department stores or online from Amazon.

Appendix B: Ethical approval



OFFICE OF
RESEARCH
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Fax 416 736-5512
www.research.yorku.ca

Certificate #:	STU 2016 - 018
Approval Period:	02/19/16-02/19/17

ETHICS APPROVAL

To: **Melanie McBride**
Graduate Student of Communication & Culture Studies
Faculty of Liberal Arts & Professional Studies

From: Sr. Manager and Policy Advisor, Research Ethics
(on behalf of), Chair, Human Participants Review Committee

Date: Friday, February 19, 2016

Title: **Situating Smell: A Cross-Cultural, Sensory-Ethnographic Study**

Risk Level: Minimal Risk More than Minimal Risk

Level of Review: Delegated Review Full Committee Review

I am writing to inform you that this research project, "**Situating Smell: A Cross-Cultural, Sensory-Ethnographic Study**" has received ethics review and approval by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

Note that approval is granted for one year. Ongoing research – research that extends beyond one year – must be renewed prior to the expiry date.

Any changes to the approved protocol must be reviewed and approved through the amendment process by submission of an amendment application to the HPRC prior to its implementation.

Any adverse or unanticipated events in the research should be reported to the Office of Research ethics (ore@yorku.ca) as soon as possible.

For further information on researcher responsibilities as it pertains to this approved research ethics protocol, please refer to the attached document, "**RESEARCH ETHICS: PROCEDURES to ENSURE ONGOING COMPLIANCE**".

Should you have any questions, please feel free to contact me at: _____ or via email at: _____

Yours sincerely,

M.Sc., LL.M
Sr. Manager and Policy Advisor,
Office of Research Ethics

Appendix C: Diplomas


L'ATELIER
DES PARFUMS

Diplôme d'Initiation

Les Ateliers Molinard certifient que M. Melanie McBride
a participé au cours d'Initiation à la Création de Parfum.

Délivré le 04/28/2016

PARFUM N° 2016-883

◆ Note de Tête : Fleur de Oranger 5 / Nadi 2.5 / Petitfraisin 4 / Verveine 1.5

◆ Note de Cœur : Jasmin 1 / Sage 3 / Neroli 1 / Lavande 1 / Basil 1 / Geranium 0.5 / Feugere 4

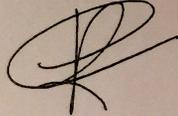
◆ Note de Fond : Iris 10 / Leather 4 / Mousse 7 / Cedre 3 / Tuberoze 1

www.molinard.com

60 Bd Victor Hugo, Grasse
37 Place aux Aires, Grasse
20 Rue St François de Paule, Nice
Tel (33) 04 92 42 33 21

Le Parfumeur

MOLINARD
PARFUMEUR DEPUIS 1849



GALIMARD
PARFUMEUR EN 1747



DIPLÔME D'ÉLÈVE-PARFUMEUR

Atteste que Madame Melanie Mc Bride
a participé au stage d'Initiation à la Parfumerie dans notre
STUDIO DES FRAGRANCES
et a créé son propre Parfum, dont la formule porte le N°: 105 440
Fait à Grasse le 21 Avenir 2016



LE STUDIO DES FRAGRANCES
B.P. 42090 - 06131 GRASSE - FRANCE
TEL : +33 (0)4 93 09 20 00 - FAX : +33 (0)4 93 70 36 22
WWW.GALIMARD.COM

Caroline De Bonting
Parfumeur
De Bonting

Fragonard

PARFUMEUR

DIPLOME

Décerné par la Parfumerie Fragonard à

Melanie McSuidé

qui a suivi avec succès le stage de découverte olfactive "L'Apprenti Parfumeur".

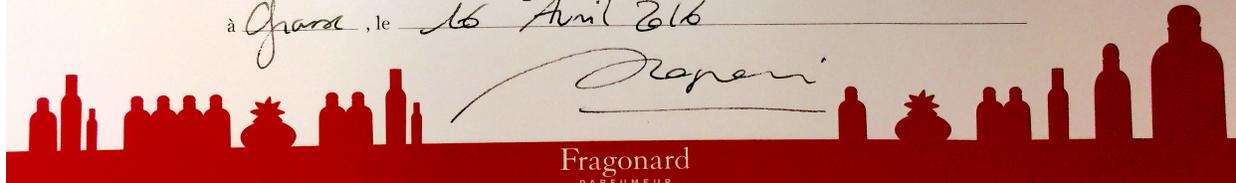
Le programme de ce cours a porté sur les différentes méthodes d'extraction et la reconstitution d'une Eau de Toilette.

Pour la Parfumerie Fragonard

Diane Ropari

à *Grasse*, le *16* *Avril 2016*

Ropari



Appendix D: Perfume Formulas

Perfume 1: *Musc Marjorie* (Marjorie's musk) [reorder # 105 440]

Created by: Melanie McBride

Perfumery: Galimard, April 21, 2016

Top / Head / Peak Notes	MI Qty	MI Qty
Rose de Mai	3	20-30
Sauge Sclaree (clary sage)	2	
Verveine (verbena)	5	
Cardamome	5	

Heart / Middle Notes	MI Qty	MI Qty
Jasmine musc (house blend)	5	20-30
Magnolia	5	
Note civette	3	
Violette de Parme (house blend)	5	
Reglisse (liquorice)	2	
Note Tabac	5	
Rose d'Orient (house blend)	5	

Base Notes	MI Qty	MI Qty
Arbre Vert (check/house blend)	10	
Amber oriental (house blend)	10	
Cuir (leather)	10	
Castoreum	5	
Bois et Tonka (house blend)	20	
OpoPONax	2	
Mousse d'arbre (tree moss absolute)	3	

Perfume 2: *Terre de Grasse*

Created by: Melanie McBride

Perfumery: Molinard, April 28th, 2016

Top notes: 12.5 ml

Fleur d'oranger	5
Neroli	2.5
Petitgrain	4
Verveine	1.5

Heart notes 12.5

Jasmin	1
Sage	3
Fougere	4
Narcissus	1
Geranium	0.5
Basil	1

Base notes 25 ml

Iris	10
Leather	4
Mousse (oakmoss)	7
Cedre	3
Tuberose	1