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An Introduction to Theatrical Scent Design as Compared to Traditional Design Areas with a
Consideration for the Scientifically Notated Physical and Emotional Effects on the Human Body
as it Potentially Relates to Future Creative Endeavors: A Framework.

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Fine Arts
at Virginia Commonwealth University.

By

Katherine Renee Holland, BFA Acting Shenandoah University 2021

Director: Dr. Jesse Njus, Assistant Professor, Department of Theater

Virginia Commonwealth University
Richmond, Virginia
April, 2023

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Abstract

AN INTRODUCTION TO THEATRICAL SCENT DESIGN AS COMPARED TO TRADITIONAL DESIGN AREAS WITH A CONSIDERATION FOR THE SCIENTIFICALLY NOTATED PHYSICAL AND EMOTIONAL EFFECTS ON THE HUMAN BODY AS IT POTENTIALLY RELATES TO FUTURE CREATIVE ENDEAVORS: A FRAMEWORK

By Katherine Renee Holland, MFA

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Fine Arts at Virginia Commonwealth University.

Virginia Commonwealth University, 2023

Major Director: Dr. Jesse Njus, Assistant Professor, Department of Theater

Traditional areas of theatrical design are established to the point of having a solid foundation for current and future designers to rely on as they strive to innovate. The same cannot be said for scent. I believe that art, like science, is a sector where the imagination is used to push the boundaries of what we currently know and can do. Artists are therefore entrusted with the responsibility to continue testing those boundaries, and that is what my topic lays the foundation for when it comes to scent. With my topic, I plan to look at the practical and ethical challenges of scent design through the phenomenon of sense memory, its potential effects on the audience physically and emotionally, and the possibilities for its use in the future.

Vita

Katherine Renee Holland was born on October 7, 1998, in Mecklenburg County, North Carolina. She graduated from Halifax County High School, South Boston, Virginia in 2017 and received her Bachelor of Fine Arts in Acting from Shenandoah University in 2021.

Chapter One: Top Notes – A First Look at Scent and its Ability to be a Tool of Design

Vision, and not the other senses, has long been considered the primary one, and as such, design professions have tended to focus this way¹. The development of aesthetics as a philosophy of the visual fine arts makes this separation evident². Originally, the Greek ‘*aisthesis*’ involved the full range of sensory experience, concerned with the breathing of the world³. It is this that Liz James points to: “It is the traditions of Western philosophical thinking about the senses, based on Plato and Aristotle, that have placed sight and then hearing as the most significant and spiritual of the senses, relating them to the higher functions of the mind, and which have relegated smell, touch and taste to the lower functions of the body, considering them base and corporeal.⁴” From then on, the ‘higher’ arts dealt with the visual and the audible - both distanced and detached experiences⁵. According to Christian Mertz, “It is no accident that the main socially acceptable arts are based on the senses at a distance, and that those that depend on the senses of contact are often regarded as ‘minor’ arts (= culinary arts, arts of perfume, etc).⁶” It is the secondary senses that hold the important potential for designing for time and for memory⁷.

Scent and its theatrical uses are not a particularly popular topic of research. To ensure a common knowledge base, I will be focusing this chapter on its commonalities with other areas of design, what makes it stand out, and select examples of its use in reality. The various aspects of theatrical design may appear to be very different from each other, but they all serve the same function: to give information on the cultural and environmental world of the play, to show

¹ Dr. Jacky Bowring, “The Smell of Memory: Sensorial Mnemonics,” *The Landscape Architect, IFLA Conference Papers* (May 2006). 157

² Bowring, “The Smell of Memory: Sensorial Mnemonics,” 157

³ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 157

⁴ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 157

⁵ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 157

⁶ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 157

⁷ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 157

implications of class of the characters, and to indicate the period that the play takes place. I want to mainly focus on the design areas of costumes and scenic as those are the aspects that an audience member is most likely to consciously understand the information being given.

Environment:

Starting with the environment, the material used to construct something with or the colors it is painted or dyed can be subtle indicators of place. Material can be very region-specific, and construction is usually based around what the external environment is like. Houses and furniture are built differently depending on if one is in a warm climate versus if they are in a cold or temperate one, is there more wood readily available in the region or is it more logical to rely on stones or mud? It could also be a region where it is more popular to have brightly colored buildings and tile mosaics versus a more neutral color palette throughout. When looking at the clothing, is it made from heavy wool and furs or is it going to be more of silk and light linen? These give clues to the environment the characters are living in. Color, while also dictated by the environment, becomes a little harder to define when also considering culture and class. For example, take Chekov's *The Cherry Orchard*. The ancestral house in the play is surrounded by winter cherry trees, so it is more likely for the furniture to be made from this dark wood as opposed to something lighter, such as ash.

Class and Culture:

A lot of rules governing the availability of materials and dyes can go out the window if a person is at the top of society. These people can afford to be surrounded by objects that come from regions that vastly differ from theirs. Aside from that, the dual effects of class and culture

on color is more clearly seen in the upper classes. Class-wise, sumptuary laws and regulations dictated the cloth – what kinds and how much – and colors allowed in each strata of society, though money was often the main point of distinction. Wealthier individuals could have clothing that was more vibrantly colored or more elaborately made while the poorer someone was the simpler overall their clothing would be. For class specific rules, a popular example would be the reservation of purple for royalty. The most infamous of the purples in the West is known as Tyrian Purple. To make this specific dye, secretions from the *Murex brandaris* and *Purpura haemostoma* mollusks need to be extracted while the mollusk is still alive⁸. Once extracted, the liquid is left exposed to sunlight for a specific period of time in order for the dye to change to its sought after hue⁹. One gram of this dye comes from twelve thousand mollusks¹⁰. Even today, two hundred fifty milligrams of Tyrian Purple pigment can cost someone \$1,015.00¹¹. Having even just a part of one's clothing dyed that color is an instant status symbol, and one usually only royalty could afford. A distinction between money and class has been made as there are periods of history where class does not equal wealth. On the cultural side of color, symbolism becomes heavily involved. Color codes differ from region to region. Within the Heian period of Japan, there was a symbolism of color patterning for high-class women that was tied to specific days, ceremonies, and seasons (kasane no irome)¹². In India, red is the traditional color for brides while in the US and other countries, white has become the traditional bridal color of choice. On a more basic yet arguably confusing level, white does not always mean good and black does not

⁸ "Tyrian Purple," The University of Chicago Library, The University of Chicago, 2007, <https://www.lib.uchicago.edu/collex/exhibits/originsof-color/organic-dyes-and-lakes/tyrian-purple/>

⁹ "Tyrian Purple," The University of Chicago Library

¹⁰ "Tyrian Purple," The university of Chicago Library

¹¹ "Tyrian Purple, genuine," Kremer Pigmente, Kremer Pigmente, April 28, 2023,

<https://shop.kremerpigments.com/us/shop/pigments/36010-tyrian-purple-genuine.html>

¹² "Kasane no Irome," Sengoku Daimyo, 2019, <https://sengokudaimyo.com/garb/kasane-no-irome>

always mean evil, and when it comes to the symbolic choice of colors, designers must make the decision of whether to play it close to the chosen culture of the play or to cater to the expected audience of the show.

Period:

I would argue that the most overarching aspect that affects design choice is the period the story takes place in, as this determines what is available to the characters. If a production takes place pre-Columbian Exchange or Globalization, there is not going to be as many a variety of materials and goods available region to region as there are today. Is there a mini Ice Age and agriculture has taken a sudden hit? That is going to affect trade. Are there any major wars or pandemics? Again, the world of the play or production may be looking at a scarcity of resources that can affect what the designers fill the stage with. There are also extinctions in the natural world that need to be considered and the subsequent regulations put into law to try to combat them. Inventions are also important to pay attention to. If a theater wanted to put on period accurate productions of the events happening in Shakespeare's *Richard II* and *Richard III*, they would need to realize that there is a difference of seventy-three years between the events of the two plays (*Richard II* is in the year 1398 and *Richard III* is in 1471). Meaning, that the production would have to pay attention to the evolution of already existing objects. Poulaines for example, would have existed in both plays, but the fashionable length of the point of the shoe would be much longer in *Richard III* than in *Richard II*.

Scent:

Now, these are all visual indications that I have listed, but scent can do all of that as well without the visual aspect. Scents are very environmentally specific because they are tied to objects and phenomena, and those objects and phenomena do not exist in a void; they exist in relation to other things in the world. Using the scent of the ocean, for example, makes sense in a coastal setting such as for Rogers and Hammerstein's *Carousel* which is set in a coastal community in Maine, but would be extremely out of place *Oklahoma!* which is set in a farming community of the then territory. It does not matter whether a play is set in reality or a fictional world, when the scent of the ocean plays through, the audience immediately knows that they are being taken somewhere on the coast. But environment does not just deal with the specific physical location. It can also deal with the time of year that the play is taking place in. A person is more likely to smell the scents of burning woods like Maple, Apple, and Oak in the winter time in forested areas because that is when fireplaces are more likely to be used. This is very region and season specific. Another example is the scent of petrichor. In areas that receive both warmer temperatures and rain, people living there become familiar with a fresh, earthy, and musky scent that precedes a rainstorm. A smell such as this may not narrow down a location quite as much, but as it does not appear in colder temperatures, it can be a great indicator of seasonality.

Scent can also be culturally specific when it comes to the food and plants that a society associates more with one group or another. A combined scent of cloves, cardamom, and turmeric would elicit more of an idea of India as opposed to Canada even though those spices are now equally available in either country. Same with snow cream – a treat made by pouring heated maple syrup or, if you are in the Southern United States, vanilla and condensed milk onto collected snow that is then eaten once cooled, and maple recalling thoughts of Canada as

opposed to anywhere else. Despite Vermont also having some wonderful maple syrup and despite many other places in the world having snow, these two things are still attributed to Canada. Part of it does play into the environment, but the environment easily becomes a part of culture. Religion is where this combination of culture and environment really comes up. Many religions have liquids, powders, and objects that have become an integral part of their practice (like Christianity's Olive Oil, Frankenscense and Myrrh, or flowers such as Jasmine, Hibiscus, and Lotus in Hinduism). These tools are chosen from what could be found in the area of origin and were then codified by practitioners. When a religion spreads, those tools of worship follow to the best of their abilities and substitutions are made as needed. Those substitutions not only further define who the practitioners are, but they give rise to variations in the original fragrances found in the religion.

It might not be the most obvious, but scent is also an indicator of class. Further back in the history, it was more likely that someone with money would have more pleasant smells associated with them than someone of lesser means; they have the means to acquire a greater amount and variety of perfumes and soaps doctored with fragrances than someone who is just trying to make ends meet. Take for instance musk. It is a common enough note in many fragrances today, both expensive and cheap, however, that was not always the case. The natural musk comes from the gland a small animal called the musk deer found only in a region covering China, the Himalayas, and the north of Russia¹³. Once the glands are procured and prepped, they are stored in a tincture of alcohol for up to several years – only then are they ready to be used in perfumes¹⁴. The low supply and the long preparation of natural musk made it into an

¹³ Leanna Serras, "The Musk Deer and its Impact on the Fragrance Industry," *FragranceX* (blog), <https://www.fragrancex.com/fragrance-information/the-musk-deer-and-its-impact-on-the-fragrance-industry.html>

¹⁴ Serras, "The Musk Deer and its Impact on the Fragrance Industry"

extremely expensive fragrance ingredient, one that only the wealthiest could afford¹⁵. It was not until the late nineteenth century that a chemist was able to create a synthetic musk that the ingredient could become available at lower price points¹⁶. Even today, natural musk is only used for more expensive cologne and perfumes lines, in all others, synthetic musk is used¹⁷. A variation of this still exists in modern times, though the scent disparity is not as large as it used to be, as there are certain fragrances, especially in perfumes, that have a much higher price tag and therefore can only be afforded by the wealthy. For example, on the cheaper end of the spectrum, one can get Adorn Eau De Parfum Fragrance from Urban Outfitters for \$24.00 (though at the time of writing this it was on sale for \$14.99); its scent description states that there are notes of citrus, incense, and vanilla¹⁸. For those with a bit more money to spare, No.1 Feminine Original Collection from Clive Christian can be bought for \$815.00; its scent description gives pimento (a mixture of plum, white peach, lemon, mandarin, iris, and pimento), madagascan vanilla (a mixture of madagascan vanilla, musk, amber, and tonka bean), and ylang-ylang (a mixture of ylang-ylang, vintage iris, rose, and carnation) as its fragrance notes¹⁹.

Scent can even be an indicator of period. When thinking about cities, cities have always had an interesting smell to them, but their odor today is not the odor of one hundred, two hundred, or one thousand years ago; there are differences. There is still the general scent of urine and rotting food, but the fecal matter from horses and chamber pots have been exchanged

¹⁵ Serras, "The Musk Deer and its Impact on the Fragrance Industry"

¹⁶ Serras, "The Musk Deer and its Impact on the Fragrance Industry"

¹⁷ Serras, "The Musk Deer and its Impact on the Fragrance Industry"

¹⁸ "Adorn Eau De Parfum Fragrance," Urban Outfitters, Urban Outfitters, April 28, 2023, https://www.urbanoutfitters.com/shop/adorn-eau-de-parfum-fragrance?color=065&quantity=1&ranEAID=tv2R4u9rImY&ranMID=43176&ranSiteID=tv2R4u9rImY-PLlbNBcBfYDHeLeMnzm9xg&size=ONE%20SIZE&type=REGULAR&utm_campaign=Skimlinks%20%28Variable%20Pricing%29&utm_content=1&utm_medium=affiliates&utm_source=LS&utm_term=1149938

¹⁹ "NO1 FEMININE Original Collection," Clive Christian, Clive Christian, April 28, 2023, <https://us.clivechristian.com/products/no1-feminine>

for exhaust from various motor vehicles. And while the rivers are not necessarily clean, depending on the period, they could be a lot worse. One famous example of this is the Great Stink of London in 1858.

In June 1858, London plunged into a sewerage crisis as the River Thames, clogged with the metropoli's excrement, began to stink in a remarkable and disgusting way. So bad was the stench during this Great Stink of London that Goldworthy Gurney, Inspector of Ventilation for the New Houses of Parliament, was forced to hang sacking drenched in chemicals from windows overlooking the river. Work crews dumped tons of crushed limestone into the Thames and the sewers that were disgorging tons of raw sewage into it daily, in an attempt to control the smell. Nevertheless, the Great Stink intensified and persisted for weeks.²⁰

The crisis came about due to low water levels and a heat wave²¹. Contributing to this crisis is the popular knowledge at the time that can be summed up in the phrase "All smell is disease", a testimony by hygiene reformer Edwin Chadwick in 1846²². This idea that Chadwick testified was related to the miasma theory. A central tenet of this theory is that disease spreads through the air via clouds of gas that were identified by a foul smell²³. Another simple indicator of period would be with candles. Because of safety regulations, the candles used on stage tend to be fake and all look remarkably similar. The basic candle may look unchanged throughout time, but what it is made out of differs depending on the period. There is a trend for modern candles to be made from soy, but a few hundred years ago, animal fat was the common choice. Ignoring

²⁰ Matthew Norton, "Mechanisms and Meaning Structure," *Sociological Theory* 32, no. 2 (2014): 174. <https://www.jstor.org/stable/43186669>

²¹ Norton, "Mechanisms and Meaning Structure," 175

²² Norton, "Mechanisms and Meaning Structure," 177

²³ Norton, "Mechanisms and Meaning Structure," 177

the existence of scented candles, a plain, soy-based candle will smell drastically different from an animal fat one. Pushing the scent of a candle from that period when fake ones are being used would be a simple and unobtrusive way of introducing the period to the audience.

Next is what makes scent stand out amongst the other design areas. Without its unique abilities, there is arguably no reason to consider using scent. However, with its easy recognizability and its opportunity to utilize sense memory, there is a case to be made in favor of further exploring theatrical olfactory techniques.

The Uniqueness of Scent:

There is an interesting phenomenon that happens with scent that does not happen with other design areas, and that is that there is not really a learning curve for the audience when it comes to recognizability. There is something that goes on within the human brain that allows people to recognize scents that they have never smelled before. Now, this does not happen with all scents – there are fruits and flowering plants and foods that one has to learn to know what it is – but there are scents that are brand new and yet are instantly identified; two examples of this are a decomposing body and skunks. Aside from specific professions and unfortunate circumstances, people do not tend to come across rotting corpses, but if that scent was to be pushed through an audience with no prior experience, everyone there would be able to correctly identify it. Same with skunks. They are an animal native to North America, and even those who live within their habitat may go their whole lives without coming across one. However, without fail, a skunk's spray will always be correctly identified. There seems to be an innate knowledge of various odors, mostly negative ones, within the human body that designers can easily tap into. That is not something that can be said with costumes, or set, or with lighting. Sound might be

the closest to achieving this quirk of scent, but even then, people do not seem to have that same recognition of new sounds that they do with new scents. Delving a little into what science currently knows about the human body's ability to smell might begin to explain how that recognition ability has come to be, and it could even be a jumping off point on how to finetune the use of scents theatrically. Our sense of smell is part of the chemosensory system²⁴. Within this system, olfactory sensory neurons inside the nose connect directly to the brain²⁵. These neurons each have one odor receptor that becomes stimulated by molecules released by the things around us²⁶. Once the molecules are detected, a message is sent to the brain which then identifies the smell²⁷. With more smells than there are receptors, any molecule may stimulate multiple receptors, creating its own unique representation in the brain, which is then registered as a specific smell²⁸. Smells can reach the neurons two ways: through the nostrils and through a channel connecting the roof of the throat to the nose²⁹. Smell is also influenced by the common chemical sense³⁰. This involves thousands of nerve endings that help to sense irritating substances (i.e., onion or menthol)³¹. In the last decade or so, a second family of receptors, trace amine associated receptors (TAARs), were discovered by Stephen Liberles and Nobel laureate Linda Buck³². These were identified in the quest to answer the question of how the brain encodes likes and dislikes³³. The two researchers thought that their function would be similar to

²⁴ "Smell Disorders," National Institute on Deafness and Other Communication Disorders, U.S. Department of Health and Human Services, May 12, 2017, <https://www.nidcd.nih.gov/health/smell-disorders>

²⁵ "Smell Disorders," National Institute on Deafness and Other Communication Disorders

²⁶ "Smell Disorders," National Institute on Deafness and Other Communication Disorders

²⁷ "Smell Disorders," National Institute on Deafness and Other Communication Disorders

²⁸ "Smell Disorders," National Institute on Deafness and Other Communication Disorders

²⁹ "Smell Disorders," National Institute on Deafness and Other Communication Disorders

³⁰ "Smell Disorders," National Institute on Deafness and Other Communication Disorders

³¹ "Smell Disorders," National Institute on Deafness and Other Communication Disorders

³² Peter Reuell, "Something doesn't smell right," *The Harvard Gazette*, January 15, 2014, <https://news.harvard.edu/gazette/story/2014/01/something-doesnt-smell-right/>

³³ Reuell, "Something doesn't smell right"

that of the receptors in the taste system where there are families for bitter and sweet sensations, just with aversive smells³⁴. Liberles was quoted as saying, “We’ve been hunting for a unified theme for what the TAARs might be doing. One model is that they’re amine receptors, and another is that they’re all encoding for aversion. I don’t think either is quite correct. I think they may have started as amine receptors, but they have since evolved to do other things.”³⁵

Additionally, there is behavioral evidence to suggest that the neural circuits change from species to species³⁶.

Something else that scent does that the other design areas do not is the bringing forth of memories and emotions. It is still not quite known as to why it happens, but the brain intrinsically links specific memories with certain scents, and when a scent is recognized by the brain, that linked memory is unconsciously brought forth. Smell and memory are linked because of the brain’s anatomy³⁷.

Smells are handled by the olfactory bulb, the structure in the front of the brain that sends information to the other areas of the body’s central command for further processing.

Odors take a direct route to the limbic system, including the amygdala and the hippocampus, the regions related to emotion and memory.³⁸

According to Dawn Goldworm, “Smell and emotion are stored as one memory. Childhood tends to be the period in which you create the basis for smell you will like and hate for the rest of your life.”³⁹. Therefore, designers can purposefully choose fragrances that would engender a sense of

³⁴ Reuell, “Something doesn’t smell right”

³⁵ Reuell, “Something doesn’t smell right”

³⁶ Reuell, “Something doesn’t smell right”

³⁷ Colleen Walsh, “What the nose knows,” *The Harvard Gazette*, February 27, 2020, <https://news.harvard.edu/gazette/story/2020/02/how-scent-emotion-and-memory-are-intertwined-and-exploited/>

³⁸ Walsh, “What the nose knows”

³⁹ Walsh, “What the nose knows”

nostalgia before anything is even visually shown. What I think could be an interesting aspect of sense memory is the idea that a memory could potentially change negative feelings of an odor to positive ones. There are many cases where it is widely known that the opposite is true where a previously pleasant smell becomes something that is vastly disliked, like when someone experiences food poisoning and they are no longer able to find pleasure in the smells of the food they threw up. But I believe that turning a dislike or a natural aversion into something emotionally pleasant is possible. It was previously mentioned that there is evidence that the neural circuits for scent can differ from species to species. It is why a lot of animals, humans included, have an aversion to the scent of decaying flesh, but for some organisms, like carrion birds, it is something that draws them in. So the assumption from that is that all humans have the same pathways and yet, I would like to look at the durian fruit. The durian fruit is said to have an amazing taste but it is paired with an absolutely repulsive smell and yet, it is greatly enjoyed by people in Southeast Asia. So, somehow in their bodies, they have learned to not be turned away by the scent of the fruit – which has been described as some sort of combination of rotting onions and raw sewage. This is not an inviting combination, yet somewhere down the line, they were able to move past an aversion to the smell to taste the fruit in the first place. Not only that, but they liked it enough to introduce to children who were then able to create that link in the brain that associates the smell of that fruit with positive memories and emotions. What is even more curious about this is that our sense of smell gives us the majority of the taste of our food; without it, only sensations such as sweetness and bitterness could be detected. So how a fruit that smells so disgusting can still be so delicious is a mystery to me. I do not have any personal experience with the fruit and only have access to it frozen where I wonder if the effect is diminished. I consider the durian fruit to be a strong example of the power that sense memory

has, not only for us emotionally, but also in terms of our ability to completely change our body's reaction to specific smells, more particularly in the reversal of aversion to attraction. This is something that I believe needs to be kept in mind especially when it comes to children and the imprints a designer could make on their mind. If the first time a child comes across a scent is when it is paired with an experience they find disturbing, no matter how pleasant the scent may be, the child may acquire an aversion to it. An example could be in the original production of the musical *Mary Poppins* and its song "Temper, Temper." This number was very scary for children who had gone to see the show, and if a designer had chosen to fill the space with the scent of toasted sugar, a permanent pathway could be made in the brain linking that smell with the feeling of fear experienced during the scene. A scent that is usually viewed as pleasant and bringing joy has now become something to be avoided.

Examples:

Now the previously aforementioned abilities of scent are not just theoretical. There are modern examples of what scent can do, and these examples can be found in immersive and living museums, theme parks, festivals and fairs, and within the theater.

Museums:

With the museums, you are looking at a purpose of working to bring history into the now and working to create more of an empathic response from visitors. Immersive exhibits are not new, especially if one is looking at something like a living history museum, but the unsanitized (non-olfactorily sterile) version of living museums and immersive exhibits seems to be relatively new – and by unsanitized I do mean in the case of smell. History does not smell pretty, and it

seems counterintuitive to purposefully expose viewers to malodorous scents. However, that seems to be where the attraction lies. Over a decade ago, I visited a museum in Oklahoma City that had an immersive exhibit within, and that exhibit was supposed to put the visitor into an Old West town at midnight. The sound was there, the lights were there, the buildings were great, but it smelled really nice, almost sterile, which was interesting considering that the entrance into the space was through a barn. It smelled just like the rest of the museum. I do not know if they have since added a scent aspect to that exhibit, but that is what I mean by sanitized. There was not anything to make me, the viewer, jolt out of my current reality. Meanwhile, there is an old plantation in Northern Virginia by the name of Ben Lammond, and of the two main reasons that would draw people to visit, the one most applicable to me is in the main house. The main house has been turned into an immersive Civil War hospital museum complete with the sounds and smells that would have accompanied such a hospital during the time. I myself have not been there during operating hours, but as I was walking through, one of the employees let me know that the room that we were in was designed to release the smell of gangrene whenever someone entered. Other rooms had other smells and sounds, but that one specifically was given the designation of gangrene. That is not an attractive smell and it certainly does not provide a comfortable sensation for visitors, but the museum was going for an immersive quality, and that is what an unsanitized immersive exhibit smells like. It smells like the reality of the circumstances being displayed. Something similar would be interesting to do for Act I of *A Piece of My Heart* once the women have arrived in Vietnam. Smells of gunpowder, infected flesh, and, eventually, the musk of Agent Orange⁴⁰ would linger in the air.

⁴⁰ Brian Bullock, "The many faces of Agent Orange: Vietnam vets to discuss toxic defoliant's effects," *Santa Maria Times*, November 10, 2012, https://santamariatimes.com/news/local/the-many-faces-of-agent-orange/article_0a787f2c-2b09-11e2-9406-001a4bcf887a.html#:~:text=Going%20into%20Agent%20Orange%20was,of%20the%20Republic%20of%20Vietnam.

Theme Parks:

With theme parks, looking mostly at Disney World and Busch Gardens, you have the dual effect of immersing visitors into the world that they are creating, like with museums, but also working as an advertisement of the goods that they are selling. The main similarity between Disney World and Busch Gardens is that they both work really hard to have their visitors be fully immersed in the world's they are creating. And for both of them, they do that by playing to all of the senses. While Disney World has multiple parks to go to and Busch Gardens, at least the Williamsburg site, has only one, but within each of Disney World's parks and within the Williamsburg one, there are multiple worlds within the park that they are trying to create. For Williamsburg, it is various select countries that they are trying to immerse visitors in, and for the Disney parks – looking more closely at the Magic Kingdom and Epcot – there are specific lands being created. In Epcot, there is the World of the Future and the World Showcase, which in itself is divided into multiple countries and crafted in a way to exemplify them. Then in the Magic Kingdom, there are the different lands within like Adventureland, Tomorrowland, and Main Street USA. In all of them sound is incorporated, sets are incorporated, and smell is incorporated. These parks make sure to have the scents of the food that is available to be pushed through the crowds, not only to help create a pleasant immersion, but to also further entice visitors to spend their money on the food they are smelling. It is quite clever how they are purposefully going for a sort of two-for-one deal of being able to be praised for the attention to detail that they create within their parks, but also, to get more money out of the people who visit because they cannot help but to buy the delicious food they are smelling after doing all of the walking that these parks require. A theme park's ability to controllably spread and pinpoint

smells is something that can and should be carried into the theater world as well. On a smaller scale to theme parks, a similar business practice happens in Real Estate. Real Estate agents at open houses will either bake cookies or put on a simmer pot beforehand to give the home a sense of belonging for those coming to view it. A home that smells lived in is easier for a potential buyer to imagine themselves in and to have it feel welcoming to them rather than a house that little to no smell. Houses that smell like nothing feel like a place where memories were not and cannot be made. To avoid this, Realtors will infuse at least the kitchen space with scents meant to entice the opening of wallets. This is a very intentional business decision, and it is interesting to compare that to more of the home-grown festivals and fairs where the same sort of effect on visitors happen, but by accident.

Festivals and Fairs:

For festivals and fairs, both historic and modern, they are creating the world with scent but also using it in an accidental way, like with their food stalls. The difference between these festivals and fairs and theme parks when it comes to the smell of food is that the theme parks are purposefully pushing the scent of food that they want visitors to buy through the streets, and while this helps to make a more immersive atmosphere, the scent of the food for sale in that space would not be so naturally present. The park itself is helping to bring that scent to you to entice you to spend money. In festivals and fairs, there is a more natural persistence to the scent where only if someone is already close by to the open stall do they smell its goods. The smells at Renaissance Festivals and County Fairs are both very specific. For Renaissance Festivals, they are trying to have some sort of simulation of Medieval / Renaissance / Fantasy food, but they are not going for accuracy, so it is its own type of food that is being developed (turkey legs, mead,

teas, etc). And then, of course, a lot of them also have animals such as horses and camels that they bring in that adds to the mixture of smells and the overall experience of the festival. Same thing with County Fairs. The food there is more in the vein of something quick and easy that customers can eat while walking around that still adds to the festive atmosphere (popcorn, funnel cakes, and deep fried oreos). Healthy food is not the priority, so the iconic food smells tend to be in the families of fried, greasy, and sugary. Combine these with the smell of animals from the livestock shows as well as the nature that surrounds these events, and a very specific world is being created. For both of them, the reason that these smells are able to permeate so easily through the air is because the food tends to be out in stalls or in the open air. With theme parks like Disney and Busch Gardens, there are still some food stalls, but it is mostly enclosed eateries. Walls block the scent of food from getting out into the public, so in those cases there does need to be a deliberate push of those smells into the outdoors. Festivals and fairs are already more entwined with the outdoors and do not need the extra help.

Theater:

When it comes to theaters, there is more of a focus on ambience and cue work (when the scent is triggered by an action on stage), with the history for ambience stretching back for thousands of years. For theater, scent usage has a few purposes. One is to foster an intimate connection with an audience and to personalize an experience⁴¹. A second grouping is atmospheric / ambient cue, create mood, trigger memories / nostalgia, serve a narrative role, serve an evaluative role⁴². Lastly, it is generally used to enforce themes of the show. There is

⁴¹ Mark Blankenship, "Aroma-turgy: What's Smell Got to Do With It?" *American Theatre*, February 24, 2016, <https://www.americantheatre.org/2016/02/24/aroma-turgy-whats-smell-got-to-do-with-it/>

⁴² Charles Spence, "Scent in the Context of Live Performance," *i-Perception* (February 3, 2021): 1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7871084>

actually quite an extensive history for scent in theater in the West, beginning with coincidental usage. In Ancient Greece and Rome, if particular scents were already around, then playwrights would take advantage and place those expected scents into their play⁴³. Purposeful usage of scent started being noted in the Medieval and early Renaissance periods with the incorporation of smells, via incense or flowers, for a unifying effect⁴⁴. Next comes the 17th century. Both 1603 and 1613 saw two plays performed by *The King's Men* that had stage directions for burning incense⁴⁵. Also in this century, an association between Hell and a sulfur smell that can be traced back to a Corpus Christi drama by the Chester Cooks became codified⁴⁶. That medieval drama involved a hell mouth with the possibility of smoke and a terrible stench; the same scent play was seen in the 1510 Passion Play at Chateaudun. The use of gunpowder in *Macbeth* might have been even more purposeful as The Gunpowder Plot had been uncovered only months before the first performance⁴⁷. It is likely that the smell triggered memories of the day⁴⁸. Another progression for scent came in the 19th century. An *Antony and Cleopatra* playbill from 1873 carried a suggestion of a perfume incorporated into one of the scenes⁴⁹. A *Lady Belle Belle* playbill for scene four reads “in this scene the perfume of ‘Winter Flowers’ will be introduced by Rimmel’s Vaporizer”⁵⁰. Both of these are examples of ambient / atmospheric use. In the later part of the 19th century and into the 20th, Symbolist artistic performances joined the fray⁵¹.

These performances had various combinations of sounds, colors, and scents that were thought to

⁴³ Spence, “Scent in the Context of Live Performance,” 4

⁴⁴ Spence, “Scent in the Context of Live Performance,” 5

⁴⁵ Spence, “Scent in the Context of Live Performance,” 5

⁴⁶ Spence, “Scent in the Context of Live Performance,” 6

⁴⁷ Spence, “Scent in the Context of Live Performance,” 6

⁴⁸ Spence, “Scent in the Context of Live Performance,” 6

⁴⁹ Spence, “Scent in the Context of Live Performance,” 7

⁵⁰ Spence, “Scent in the Context of Live Performance,” 9

⁵¹ Spence, “Scent in the Context of Live Performance,” 7

correspond well presented to the audience⁵². Paul-Napoléon Roinard in December 1891 explored scent with two performances of the *Song of Songs* of Solomon (*Cantique des cantiques*)⁵³. Later on, Valentine de St.-Point in 1913 used scent with a dance performance inspired by Baudelaire's poetry and Roinard's performances in '91⁵⁴. On the Symbolist performances, Charles Spence wrote,

In this case, though, I am not aware of any record of the specific crossmodal correspondences that were incorporated into the work and whether they would have been any more meaningful to the audiences of the day than those that had been presented by Roinard some twenty-two years earlier. Nevertheless, it would appear that the Symbolists's attempts to connect diverse unisensory impressions (namely scents, sights, and sounds) in a manner that would resonate with audiences turned out to be rather more difficult to achieve than it may at first seemed to those concerned. This growing realization would, one presumes, have dampened the enthusiasm of those artists who were tempted to meddle in this space of scented symbolist performance.⁵⁵

The Symbolists were not the only ones experimenting at this time. *A Trip to Japan in Sixteen Minutes* by Carl Sadakichi Hartmann, was put on on November 30, 1902⁵⁶. The performance was accompanied by eight scents sequentially released that he thought could one, still be recognized individually despite the close line up of smells, and two, would evoke the various locations of the story's journey⁵⁷. Examples of these scent pairings are Southern France and

⁵² Spence, "Scent in the Context of Live Performance," 7-8

⁵³ Spence, "Scent in the Context of Live Performance," 8

⁵⁴ Spence, "Scent in the Context of Live Performance," 8

⁵⁵ Spence, "Scent in the Context of Live Performance," 8

⁵⁶ Spence, "Scent in the Context of Live Performance," 8

⁵⁷ Spence, "Scent in the Context of Live Performance," 8

almonds, Italy and bergamot, India and cedarwood, and Japan and carnations⁵⁸. Between the unpredictability of sense memory and some technical difficulties with releasing and clearing the scents, this experience was deemed a critical failure⁵⁹. Thinking about Hartmann's *A Trip to Japan in Sixteen Minutes*, I feel as if that same work had been done just a few decades later and if different country scents had been chosen, then he could have avoided having his performance deemed a critical failure. I understand the thought behind first choosing scents that could still be clearly identified by the nose in spite of what came before it, and maybe he then picked from those which ones would best represent each place, but looking at the examples that were given of his scent choices (with almonds, bergamot, cedarwood, and carnations), I do not register any of those smells with a specific country. Some of them may be specific to a zone but not a country. I do not know if it was the same back then – if our perceptions and associations of smell to culture / smell to country have changed – but, assuming that they were, at the very least, very similar, then I believe these chosen scents to have been wildly off base. But do scent stereotypes like the ones given in 1902 to Hartmman's productin still ring true today, or is all smell based on the designer or stereotypes of the time in which the play is produced?

There are discussions about the usefulness and harm of stereotypes when it comes to countries and groups of people, and it is a discussion that is highly prevalent in the Arts. But I think, in some aspects when it comes to scent, leaning more into the stereotype, at least right now in this mostly unexplored area, is what is best for the audience. Does Southern France have almonds? Yes. Italy has bergamot, India has cedarwoods, and Japan does have carnations, but today we may pick cherry blossoms for Japan or curry for India. When it comes to dealing with stereotypes, everyone's perception of the smells of these countries could be different. A designer

⁵⁸ Spence, "Scent in the Context of Live Performance," 9

⁵⁹ Spence, "Scent in the Context of Live Performance," 9

in theater would have to try and make the audience understand the scent and its placement in the same way a costumer would need their designs to help set the ideas of the characters into the heads of the audience with suggestive costume pieces. And while sense memory can still come into play and cause unintended interpretations from the audience about the design work, putting in a stereotypical scent might help combat that. Then the second instinct after the initial reaction from sense memory would be something like “I know vaguely what the topic of the show I am watching is. This must be what they are getting at.” It might not be the subconscious recognition that the design team is going for, but it gives the audience one more element to help them understand the theme or the piece if all the other elements did not appeal to them. Scent is the most uncontrollable of all the design areas, and that needs to be kept in mind through every step of the design process. Although, the technical difficulties that Hartmann experienced did not help things either. I do believe that if something like this had been put on decades later with newer and, ostensibly, more reliable technology, as well as with the reasearch and rigorous dedication to elements of design that there are in modern parctice, it would have been better received. However, this project and its predecessors happened in the past, but scent is still being played with in the modern era.

There seems to be more of a playing it safe attitude when it comes to scent work. It feels as if an agreeable, somewhat easy to work with, way of doing things has been found, and in the interest of not having one’s production declared a failure, it is the way to go. With that I am speaking more of what could be considered mainstream theater (i.e., Commercial Theater). These mainstream productions are the ones using what has been termed ambient and cue usage of scent. It was found that having a base scent that exists throughout the space for the entirety of the show is more manageable for a general scene setting. This scent will stay there even if there

are changes in the setting within the play. A cue scent can then be layered on or can be used on its own. A cue scent is a spray of a single smell or a cocktail of smells that, when released, signifies something important in the play. It could signify a change in the character, a change in the action, or could be entirely symbolic. Cue design allows the designers and technicians to only have to worry about achieving a single release that can go away as it pleases. But just because these productions are not as daring in how they use smell, it does not mean that there is not any creativity happening. Because of the constraints that are often put on designers – both budgetary and to help facilitate the communication between the average theatergoers - they are being more innovative with the kind of scents they are using, especially for cues. In the 1980s, Philip Prowse’s production of *Tis Pity She’s a Whore* played with ambient scent design with a “sort of charnel-house stench of death and incense [which hung] over the whole production”⁶⁰. Another ambient scent design creation could be found in Ben Randle’s production of *Sagittarius Ponderosa* in 2016: “Within a couple of seconds, you’ve absorbed it as the smell of the room. So that’s another challenge with this; it has to become more of an atmospheric component of the show, as opposed to something narrative, where you’re saying, ‘This smell happens at this exact moment, and it’s tied directly to this one event’”⁶¹. From an audience perspective, as far as I can tell, I think both of these productions were successful in their goal of setting the tone of the space for their respective plays. Moving away from ambient design, a good example of cue design is David Bernstein’s production of *You Are Made of Stars*, which had combinations of “Old Spice deodorant, crayons, condensed milk and a riding crop” at the loss of the protagonist’s virginity⁶². This moment in the play has an interesting medley of scents that all have a purpose

⁶⁰ Frey Kwa Hawking, “The (Under)Use of Scent in Theatre,” *Isis*, February 22, 2015, <https://isismagazine.org.uk/2015/02/the-underuse-of-scent-in-theatre/>

⁶¹ Blankenship, “Aroma-turgy: What’s Smell Got to Do With It?”

⁶² Hawking, “The (Under)Use of Scent in Theatre”

and a symbolic tie to the characters and to the moment. Crayons and condensed milk tie back to childhood and innocence with a feminine connotations, and the deodorant and riding crop have a more mature, rugged feel. Combined, there becomes an olfactory representation of this moment of confluence between one phase of life and the next. It not only enforces the stock character each one is portraying, but it is also signaling the change that is occurring in them both physically, emotionally, and psychologically. I say that designers like those are being innovative because I think that there is an idea that a smell must come from a base form (a visual, logical source) in order to be used – and yes, gangrene unfortunately falls under that category. It has to be natural, and I would definitely say that Old spice deodorant, crayons, and a riding crop would not be considered natural; an argument could be made for condensed milk. Following the natural root for that same scene could have almost certainly involved either cherries or some florals due to popular phrases involving the loss of virginity. I can admire that the designers did not gravitate to the obvious cherries or floral scent that the mainstream may associate with virginity but instead looked beyond the obvious to the much deeper ingrained smells that the audience would have experienced, which their brains would then have to calculate into childhood (crayons) and adulthood/maturity (deodorant and leather). If they had gone the usual route, a far different dynamic and message would have been created.

Summary:

So, what does this all mean? I view scent design as something that should be explored just as much as costumes, scenic, lighting, sound, and props have been, and I think it is a valuable avenue of storytelling for not just museums and exhibits, but for theater as well. It may have had a rocky history with attempts to curate experiences, but that does not mean that

acclaimed success is not going to ever be possible. The challenge is within scent's own unpredictability, or rather, the unpredictable reaction a brain has to it. Is there a way that scent can be used theatrically and have it be viewed and reacted to as uniformly as audience members react to other design areas? Because everything that makes scent special, everything that makes it stand out from the other visual and audible aspects, is what makes it so hard to control; that inability to control and predict is what dooms a production. Are we as artists trying too hard to go against what naturally happens with scent instead of working with those challenges, or are we not trying hard enough?

Chapter Two: Middle Notes – The Challenges of Using Scent

Now that the foundation of design has been set and a base understanding of how scent works has been given, I would like to now go into the challenges that using scent brings up; because sense memory affects the body, both physically and emotionally, in a way that lighting and sound do not do for the average person. In fact, even ignoring the phenomenon of sense memory, basic scent can still play with our emotions. Physical effects can range anywhere from a slight headache to nausea to possibly even a seizure depending on how sensitive one's olfactory system is. These physical effects can happen independently from sense memory.

There is an idea that a version of a trigger warning would have to be posted for shows that utilized scent to warn of potential issues; it would be interesting to see how that would work. There are sounds that can be easily thought of as being potentially problematic for someone, so it is relatively easy to know when a trigger warning would be needed. Those sounds are also generally tied to specific moments in the show that could also be problematic for a person to experience and watch. But with scent, unless it is widely thought of as disgusting smell, no one really thinks of a scent being potentially problematic for them. Would a preemptive warning by a show about scent usage provide the same safeguard that other trigger warnings provide? Another challenge to this is that not everyone smells the same. Hearing differences are based on vibrations in the inner ear; scent is a bit trickier, as the Covid pandemic has made more apparent with the ability for some recoverers to lose their sense of smell either temporarily or permanently.

How can someone design with a medium that is so personal yet make it general enough to not only uniformly serve an audience, but to make it safe to do so as well. And how can a designer live in that generality while still being true to the world that the playwright and the director have decided to create? If practicality and sense memory are two challenges designers

face, ethics as it relates to culture is a third. This chapter aims to explore these three main challenges and analyze how well some productions might have handled them.

Practical Challenges:

Design tends to fall into two categories: audio and visual, and scent goes into neither of those two. But because of how much we as humans have come to rely on our ability to see, sight of some sort for the audience might still be expected by other members of a production team. There is a quote by Stevenson and Case that begins to introduce the idea of imagining odors – a sort of internal sight:

The ability to imagine odors – that is, to experience a smell in the absence of appropriate stimulation – is both celebrated in English literature and may be an essential “tool of the trade” among chefs, perfumers, flavorists, and oenologists. However, several key aspects of olfactory cognition suggest that the capacity to experience olfactory imagery may be highly constrained. First, the link between olfactory percepts and language is weak, relative to the other senses, as evidenced by the difficulty that most participants have in naming even common odors.⁶³

What this begins to question is how does one design when the prospective audience will most likely not entirely understand the choices made, or is that even a question to begin with? Is it enough that the scent is there and that it does not really matter if they know precisely what it is? If most are unable to conjure up the sensation of a smell by just the verbal suggestion of it, is it even entirely necessary if the produced scent does not match the verbally given scent (when

⁶³ T. Case and R. Stevenson, “Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification,” *SAGE journals* 24, no. 1 (September 2004): 69-70.
<https://journals.sagepub.com/doi/10.2190/R97G-RM98-B58N-DUYA>

going for a more realistic immersive effect)? Stevenson and Case do not deal with the artistic, but I do believe that their further investigation into olfactory images and how it works is helpful to the discussions on scent application in theatre, so I will be delving further into the topic.

Since the bringing forth of an olfactory image might depend upon the reciprocation of the link between the percepts and language, the weakness of the link might make it difficult to activate the long-term memory needed to form an image⁶⁴. Experimentation work suggests that a short-term memory system is also needed for supporting imagery, yet it is disputed as to whether it is present with olfaction⁶⁵. Olfactory cognition might also be dependent upon a system of semantic representation warning for danger (a system warning of danger) instead of perceptual representation (how humans transform sensory stimuli into more abstract levels of experience – as with sight and sound), yet the ability to experience olfactory imagery is based on a system that supports perceptual representation⁶⁶.

According to self-reported data, personally willed olfactory imagery was the least vivid of all of the sensory modalities⁶⁷. One reason for this could be that participants reported questioning their olfactory experiences more than for any other⁶⁸. However, those results came from what Stevenson and Case described as “normal participants⁶⁹”. More supportive reports

⁶⁴ Case and Stevenson, “Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification,” 70

⁶⁵ Case and Stevenson, “Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification,” 70

⁶⁶ Case and Stevenson, “Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification,” 70

⁶⁷ Case and Stevenson, “Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification,” 70

⁶⁸ Case and Stevenson, “Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification,” 70

⁶⁹ Case and Stevenson, “Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification,” 72

come from the area of olfactory hallucinations⁷⁰. There is an example given by B.K. Toone about an adult who reported that "...he perceived pungent odors which on further investigation proceed to be completely unfounded. On entering a public house he was overwhelmed by the agreeable aroma of a Sunday joint in preparation. He complimented the landlord only to be informed that no cooking was taking place on the premises⁷¹." Several similar reports are found in literature on epilepsy where an olfactory hallucination would be experienced right before a seizure⁷². D. Daly describes two cases where a hallucinated odor was so unpleasant as to incite an extensive search for its source⁷³. Similar examples can be found in patients with migraines, PTSD, schizophrenia, and following chemotherapy, and they are the best evidence of olfactory experiences that occur sans stimulation⁷⁴. The people in these cases were able to provide a solid identification of their hallucinated scents, but better results came from those who experienced olfactory dream imagery⁷⁵. Stevenson and Case put forth three explanations as to how that data could have come about. One, the differences in dream imagery vs none did not seem to come from motivational variables as those who were presumably more motivated in describing their dreams than those who were briefer⁷⁶. Two, while there was a difference in naming ability for those who were more interested in their olfactory sensorium, it still did not account for the

⁷⁰ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 71

⁷¹ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 71

⁷² Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 71

⁷³ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 71

⁷⁴ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 71

⁷⁵ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 82

⁷⁶ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 83

difference between dreamers and non-dreamers⁷⁷. And three, aside from a previously observed relationship in another study between a social desirability index and self-reporters of visual imagery, nothing new to that variable was found⁷⁸. This leads Stevenson and Case to suspect that,

Olfactory dreams reflect a capacity to experience olfactory sensation in the absence of appropriate stimulation is the observed relationship between volitional imagery and olfactory dreams. First, although weak, possibly for reasons alluded to above, there was still a relationship between olfactory dream vividness and olfactory imagery vividness that survived partialling out visual imagery vividness. Thus, these two abilities appear related in so far as we can tell without also partialling out auditory and tactile imagery vividness as well (something which could not be readily achieved because relatively few participants report dream imagery in all modalities).⁷⁹

In essence, it appears as if someone is able to experience olfaction in their dreams, then they are also capable of experiencing sensations of olfaction without the need of stimulation.

Another practical challenge to overcome is something simple, yet most likely overlooked, and that is when a designer's opinion of a scent blend is accidentally confusing and affronting for their audience. There is a corporate example of this from the 1980s, where Uri Almagor, E. Cohen, and A. Goldman conducted a research seminar titled "Color, Taste and Smell."⁸⁰ In this seminar, the two researchers exposed fifteen student to the smells of aroma disks from the

⁷⁷ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 83

⁷⁸ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 83

⁷⁹ Case and Stevenson, "Olfactory Dreams: Phenomenology, Relationship to Volitional Imagery and Odor Identification," 84

⁸⁰ Uri Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," *Human Studies* 13, no. 3 (1990): 259. <https://www.jstor.org/stable/20009098>

American company, Environmental Fragrance Technologies⁸¹. This company's aim was to provide scent disks that could be placed in their Aroma Disc Player, with the idea that their system would "open up a new world in which your fragrant environment can be changed as simply and quickly as changing audio records.⁸²"; these disks were named anywhere from *Men's World* and *Mountain Top* to *Seductions* and *Passion*⁸³. When the students were asked to identify the smell given to them and to name what it reminded them of, none were able to identify the smells and their associations were nowhere close to the product's names⁸⁴. At a later event, Almagor conducted the test again, when a person was asked if they experienced an emotional change or if they were affected in some way, no matter the person, the first question was always answered negatively and the second, "only that it disturbed them, and that the smell was inharmonious with the atmosphere of the party.⁸⁵". These uncontrolled exercises suggests that the company's failure in their objective comes from the clash of an individual's association of smell and context from their lived experience with the meanings given by the manufacturer to the different odors⁸⁶. This now encompasses two issues: one, the unavoidable personalization of scents that lead to differences of opinion from one person to another, and two, the ethical issue of assuming and implying a typical or common knowledge of the emotional and contextual meanings of various scents across cultures. Never mind that there is an indication that even odors that within a society are closely associated with specific contexts, that only through an individual's personal experience and self-knowledge can it have meaning⁸⁷.

⁸¹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 259

⁸² Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 259

⁸³ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 259

⁸⁴ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 259

⁸⁵ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 259

⁸⁶ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 260

⁸⁷ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 260

Practical challenges that deal with the audience often veers into conversations about culture. In today's world, there are many ongoing conversations about appropriation/appreciation, what elements of a culture are the most important to get right/who has the right to make those decisions and attempts, and – when it comes to art – what kind of representation is most important right now. These ethical questions, especially with scent, are often a question of what is practical and possible. So, while a discussion on the connectedness of scent and culture would fit in this section on practical challenges, I feel that it needs to be looked at through more of a view of ethics.

Ethical Challenges:

“It is commonly accepted that the study of the social and cultural significance of odors is difficult if not impossible⁸⁸” – Uri Almagor. This is so for multiple reasons that lead into each other. First is Western science's emphasis on rationality and reason to the point that in social analyses, the studies are focused on group behavior (reason) as opposed to the individual (emotion)⁸⁹. Second is that within popular sayings, there is an implication that – unlike sounds and colors – odors have no intrinsic standards, making it to where they cannot be translated into terms of absolute wavelengths (though there has not been any conclusive evidence on this)⁹⁰. Third, there is an idea that individuals will perceive an odor differently emotionally, and therefore also in their reactions, since odors are related to experience, and perceptions are mostly made early in life⁹¹. And fourth, unlike with the other senses, there is a problem with measuring and comparing odors as well as separating the stimulus and perception from the aesthetics of

⁸⁸ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 253

⁸⁹ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 253

⁹⁰ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 253-254

⁹¹ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 254

their interpretation⁹². Because of these difficulties, there are three main approaches to the subject of odors: structuralist, semiotic, and aesthetic.

A structuralist approach takes advantage of the commonality across cultures to divide scents into two categories: attractive and repellent⁹³. It is this built-in element of dichotomy that provides a way to symbolize social extremes or to stereotype oppositional groups⁹⁴. The semiotic approach focuses on the nature of smell as a signal in communication⁹⁵, and the aesthetic approach elaborates on the effect odors have on aesthetic judgment and the senses – though mostly with perfume⁹⁶.

In a sight-oriented society, the perception of the world develops through learning with sight and sound, even though the olfactory system also provides information about the outside world⁹⁷. With an assumption of someone interacting with their surroundings through sight and sound, smell becomes thought of as anachronistic and primitive⁹⁸, something only useful for animals. It can even be argued that a human's sense of smell is limited by the temporal and spatial context of the odors, limiting the information provided in that form⁹⁹. However, when it comes to shaping one's identity and internalizing culture, odors play a crucial role¹⁰⁰. When it comes to odor perception and its various applications in the reality of everyday life, its three dimensions need to be distinguished in order to see the differences in application¹⁰¹. First dimension covers the odors that, when combined, produce an aroma of ecology and culture¹⁰².

⁹² Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 254

⁹³ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 254

⁹⁴ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 254

⁹⁵ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 254

⁹⁶ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 254

⁹⁷ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 256

⁹⁸ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 256

⁹⁹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 256

¹⁰⁰ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 256

¹⁰¹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 257

¹⁰² Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 257

Second dimension is for the odors that connect to an individual's experience as they derive from objects and activities in society and nature, though they are still a part of the shared knowledge of that society¹⁰³. Third dimension still covers odors that are connected to an individual's experience, but the meaning is only known to the individual's private world and experiences as opposed to the whole society¹⁰⁴; the third dimension will be covered in the next section on sense memory.

Odors in the first dimension are what characterize a society or community through the factors producing odors; these include cooking techniques, patterns of sanitation, humidity, vegetation, spices, temperature, evaporation, patterns of production, and physical objects¹⁰⁵. All these factors are taken for granted by those in the society and the region¹⁰⁶. While there might be variations in the locality, a scent is produced that is difficult to describe and which is rarely noticed¹⁰⁷. However, that scent does become noticed and culturally meaningful when one leaves the society for a time, and they have a realization that there are scents which characterize their culture¹⁰⁸. Those odors belong not to an object, but a whole region; a "smell of homeland" that is difficult to describe¹⁰⁹. An attempt to analyze this smell often results in a futile attempt to break it into its parts and describe them¹¹⁰. This is meaningless since the wholeness of the odor is destroyed, and the individual parts are not representative by themselves¹¹¹.

¹⁰³ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 258

¹⁰⁴ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 260

¹⁰⁵ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 257

¹⁰⁶ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 258

¹⁰⁷ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 258

¹⁰⁸ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 258

¹⁰⁹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 258

¹¹⁰ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 258

¹¹¹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 258

In the second dimension, we get phrases such as “the smell of an unaired room”, the smell of freshly baked bread”, or “the smell of rotten fruit”, as they are references to objects in reality that exude odors which are perceived as typical¹¹². Odors in this dimension convey messages and share experiences which most individuals have come across. Olfactorily speaking, this is the cultural context of smells and their accepted social norms in the objective reality¹¹³. Whewell provided a vivid description in reference to his childhood memories in England that is an example of the cultural association of activities, properties, objects, and habits with odors at a certain era¹¹⁴. This is feasible due to two assumptions: one, that your image of a certain smell is shared by other people who have had similar experiences, and two, that the meaning you give to various aspects of reality is also shared by other people¹¹⁵. Therefore, when someone wishes to convey information in reference to smell, they refer back to shared knowledge in the reality of different objects that produce that smell. Putting aside professional perfumers, attempts to define odors as independent from context is bound to fail because that contradicts the status of odors being culturally ambiguous, or that odors are an inherent part of that which they signify¹¹⁶. To solely use terms of odor sensations in the transfer from the internal world of the individual to a construction of reality is a difficult task due to the lack of a clear-cut classification of odors¹¹⁷.

This subjective world of odors is one of the most vigorous and meaningful experiences in one’s life-world, but paradoxically it does not come to the fore as a means of verbal expression in face-to-face interaction. Indeed, the idiosyncratic and unique odor experience of the individual cannot be transmitted in discourse for it lacks the “known-in-

¹¹² Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 258

¹¹³ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 258

¹¹⁴ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 258

¹¹⁵ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 258

¹¹⁶ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 258-259

¹¹⁷ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 259

common character”, and hence usually follows Wittgenstein’s observation noted at the end of his *Tractatus*: “What we cannot speak about must pass over in silence.”¹¹⁸

It becomes more obvious that the olfactory sense is simultaneously weak and strong when it is used to refer to time and space¹¹⁹. Weak because odors are fleeting, eluding locality and endurance as they are not entities¹²⁰. The usage of metaphors and the words that describe odors are similar per Wright as “(the description of odors) ... are carried over from other kinds of sensation, so that one odor may be described as bright or clean and another as heavy and still another as sour. At other times an odor will be described on the basis of its association with a particular source. It may be fishy, or violet, or smoky...¹²¹”. Because odors represent categories of distinction and focus on contexts of objects in reality, people are led to feel, think, and envisage that which is difficult to express¹²². They are weak because they are “no more than an allusion to reality that gives it meaning.¹²³”. Strong because odors carry messages that cannot be ignored and illicit an immediate reaction¹²⁴. Almagor presumes that the language of ‘weak’ and ‘strong’ is used because smell is being compared to the roles that sight and sound play in life¹²⁵.

Going back to the three approaches to scent, it is noted that they complement each other and that together, they might explicate the roles of odor in society¹²⁶. Some of these roles are the context in which odors are used in cultures, the symbolic nature of scents, and their provision for metaphors and stereotypes; however, the three approaches alone cannot cover the full range and

¹¹⁸ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 262

¹¹⁹ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 263

¹²⁰ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 263

¹²¹ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 263-264

¹²² Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 264

¹²³ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 264

¹²⁴ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 264

¹²⁵ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 264

¹²⁶ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 254

significance odors have in daily life¹²⁷. While a structuralist approach provides a total view of a culture, it fails to account for the nuances of either extremely good or extremely bad odors¹²⁸. It is in this that the semiotic approach thrives, but it is here that because smells are not external to their referents and that their meaning is not discovered by distinguishing it from other smells, the semiotic status of a smell is ambiguous¹²⁹. Finally, with the aesthetic approach, even though it goes into a person's emotional sensation and aesthetics, it only focuses on pleasant odors and ignores the repugnant ones¹³⁰. It is here that the next ethical challenge arises, because as Almagor says,

What interests us, as social scientists, is the fact that the olfactory system is tied directly and intimately to the part of our brain most involved with memory and emotion, and that odor is often the mechanism which triggers off (and leads to) changes in our moods, behavior, and thoughts.¹³¹

Triggering a memory or emotional response is not entirely problematic. What makes it so, is that traumatic memories can be brought to the forefront, and when even a positive recollection can make someone feel disconnected from reality if it is strong enough, putting someone, inadvertently, through that for negative emotions and memories is something to be acknowledged.

Sense Memory:

¹²⁷ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 254

¹²⁸ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 254

¹²⁹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 254

¹³⁰ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 255

¹³¹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scents," 253

The three approaches above need to be supplemented with another approach that considers the embedded emotional, cognitive, and existential overtones of odor in an individual's sense of reality¹³². This is where the third dimension comes in. In this dimension, odor perception is neither a part of the common knowledge of a society or of the shared experiences of others¹³³.

A person can say that a baby's body smells like "a griddle cake that's been soaked in milk" or talk about the "smell of May rain" quite easily as they are referring to objects in reality¹³⁴. The distinction here is that these references do not contain specific and commonly known odors to everyone in a society¹³⁵. It can be argued that in those instances, it is the poetic image evoked that is central as opposed to the specific meaning of the odor; however, like in the second dimension, an individual's reality is mediated through odors, though the reference takes a different consideration than it would in the second¹³⁶. Even if others have gone through the same experience, like with the baby, they can still disagree with the association made¹³⁷. Or, as with May rain, they will intellectually know what is meant, but will be unable to recollect that particular smell¹³⁸. Lastly, even if someone else is able to smell that which is structurally similar to the reference (griddle cake and baby), they may be unable to associate the two smells as their objects are unrelated¹³⁹. This points to a "private world", something which is founded on

¹³² Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 255

¹³³ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

¹³⁴ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

¹³⁵ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

¹³⁶ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

¹³⁷ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

¹³⁸ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

¹³⁹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

individual experiences and memories that are evoked by odors and whose meanings are difficult to share¹⁴⁰.

It is in these private worlds and the third dimension, that leads [author] to think of the argument on private language and Wittgenstein's rejection of it¹⁴¹. This argument being that "a private language, in the sense discussed by Wittgenstein, is a language whose words refer to what can only be known to the person speaking; to his immediate private sensations," that such a thing would be meaningless¹⁴². For Almagor, however, they bring up private language in reference to the private sensation of odors that cannot be communicated, defined, or explained¹⁴³.

The private language of odors differs from that of words in another way: in odors, there is a distinction between the object in reality and the meaning for the individual; in the third dimension, there is no correlation between the two¹⁴⁴. In reality, objects have a common social meaning that is communicable, odors with a private meaning do not, and therefore cannot be put into social use¹⁴⁵. Almagor's example of this is as follows: "If I want to convey the meaning of, say, the odor of babies' feet, I know what I mean, and you may know the objects (e.g., "babies' feet", "a warm stone") I am referring to, but the association of meaning between the two objects which I make is not the meaning that you will know.¹⁴⁶". In other words, even if two people share a culture and an idea of 'the private', they will still find it difficult to perceive another's private experience¹⁴⁷.

¹⁴⁰ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

¹⁴¹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260

¹⁴² Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 260-261

¹⁴³ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 261

¹⁴⁴ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 261

¹⁴⁵ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 261

¹⁴⁶ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 261

¹⁴⁷ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 261

These dimensions of odor perception suggest that odors allow us to move through different spheres of reality¹⁴⁸. We encounter various smells as we move through reality, and when we're reminded of them, the odors generate the reality in which they draw attention¹⁴⁹. It is this evocative power of smell that gives meaning to the different spheres of someone's world by generating thoughts and emotions¹⁵⁰. Odors enable us to go from one situation in the objective reality to a subjective one because they provide standards for cultural demarcation and unique connotations to each individual's biography¹⁵¹.

Odors withdraw from things observed and reflect on the past as Now and Here, vigorously accentuating the notion of 'bracketing the world'¹⁵². Most of the odors that reach us are compatible with the environment they come from, therefore going unnoticed by us; stimulation occurs with an alien odor in our immediate vicinity¹⁵³. In our consciousness, odors are connected with past events, so they may announce that which is not present¹⁵⁴. When an odor reminds us of the past, it is because a disparity is created between the perceived objective social reality and a person's subjective scent-world¹⁵⁵. The elements of space and time cannot be distinguished between in such an odor recollection of a context¹⁵⁶. The olfactory system operates in such a way that, rather than grouping together similar scents by their odorous essence, a smell is instead associated with an event¹⁵⁷. Patrick Süskind has a description of Genuille's sensation when he smelled a smell similar to one he had ten years before that serves

¹⁴⁸ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 262-263

¹⁴⁹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 263

¹⁵⁰ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 263

¹⁵¹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 263

¹⁵² Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 266

¹⁵³ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 266

¹⁵⁴ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 266

¹⁵⁵ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 266

¹⁵⁶ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 266

¹⁵⁷ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

as an example of this: "... and then it retreated to his solar plexus, and then rushed up again and retreated again, and he could do nothing to stop it. This attack of scent had come on too suddenly. For a moment, for a breath, for an eternity it seemed to him, time was doubled or had disappeared completely for he no longer knew whether now was now and here was here, or whether now was not in fact then and here there.¹⁵⁸"

There is a clear temporal dimension from such vividness of smelling¹⁵⁹. A person will be cognitively transformed to a point in their past because familiar odors mediate different senses of time, and the perception of a distinctive odor brings to the present a vivid memory of a previous event or occasion¹⁶⁰. One, the latter, is when a specific smell is recalled from the past and creates an awareness of one's position in time that may be evaluated through shifting between two contexts which share a similar smell¹⁶¹. The former deals with the sense of time, which we experience through events¹⁶². We sense the temporal flow in a different way to units of time because time is preserved through images, events, and analogies, which are subjective, unlike time units, which are common temporal concepts of objective reality¹⁶³. Viewing the duration of time through events associated with an imprinted scent creates an element of illusion¹⁶⁴. This renders a temporal incompatibility with objective time, the units of one's culture¹⁶⁵.

Distance in space and time is abolished by the mind's ability to register a present scent and compare it with impressions or patterns stored in the memory¹⁶⁶. Individuals are enabled to

¹⁵⁸ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

¹⁵⁹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

¹⁶⁰ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

¹⁶¹ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

¹⁶² Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

¹⁶³ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

¹⁶⁴ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

¹⁶⁵ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

¹⁶⁶ Almagor, "Odors and Private Language: Observations on the Phenomenology of Scent," 267

sense the scent of reality as a device for ordering loose concepts as memories of past experiences because of the cognitive and emotional complexity of scent memories¹⁶⁷. However, it may give the individual the feeling that the existence of present physical objects had some other context in the past¹⁶⁸. On the other hand, a cognitive and emotional anchorage to the intangible content of distant objects is given to the individual without any need for social confirmation¹⁶⁹.

In the next section, I will go through some sample productions and examine how well they faced the challenges inherent in this medium of design.

Till Birnam Wood:

Till Birnam Wood is an adaptation of Macbeth that debuted in 2014, directed by John Schultz, at the Philadelphia Fringe Festival¹⁷⁰. As part of the show, the audience starts off in sight, but early in the beginning of the play, are instructed to blindfold themselves¹⁷¹.

According to the playbill, the concept of experiencing the play in darkness “immerses the audience in the action,” and it does make sense if you think about how we experience real-life weather. Sure we look at the sky, but you know it’s storming when you smell the soaked and steaming pavement, wet your skin, hear the thunder, feel the chill roll in on the wind, or flex that gritty, feverish ache in your joints just before the rain marches.¹⁷²

¹⁶⁷ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 267

¹⁶⁸ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 267

¹⁶⁹ Almagor, “Odors and Private Language: Observations on the Phenomenology of Scent,” 267-268

¹⁷⁰ Alaina Mabaso, “Till Birnam Wood... “watching” Shakespeare while blindfolded,” *artblog* (blog), September 10, 2014, <https://wwwtheartblog.org/2014/09/till-birnam-wood-watching-shakespeare-while-blindfolded/>

¹⁷¹ Mabaso, “Till Birnam Wood... “watching” Shakespeare while blindfolded”

¹⁷² Mabaso, “Till Birnam Wood... “watching” Shakespeare while blindfolded”

A review by Alaina Mabaso did warn that with the march of Birnam Wood came a scent likened to “the piney scent of 100 evergreen air fresheners,” and that those with sensitive noses could feel a sensory onslaught from that moment¹⁷³.

A year later, the production was put up again, but with some slight alterations made¹⁷⁴. Aside from a change in venue, I have not been able to find an exact description of all the changes made, but the important ones stayed the same: audience is blindfolded for the performance, and the scent of pine was introduced with the forest¹⁷⁵. Susan L. Feagin made a reference to the scent that leads me to believe that it had a different effect in this new space, “towards the end of the hour, I thought I caught a whiff of pine. I took a deep breath: definitely pine. Birnam Wood had come to Dunsinane. And it clearly came from my left.”¹⁷⁶

What is clear about Shultz’s vision is that he has made it a point to engage and highlight senses other than sight. In this, I feel comfortable saying he succeeded (the blindfold was a great idea). However, I cannot be so definitive when it comes to the scent design. In neither production was it a failure, but I would say that perhaps some things were learned between 2014 and 2015. The 2014 production came with a review warning of a powerful fragrance, while the 2015 production has a review hinting at a more subtle or gradual application of the pine scent. Additionally, the clear connection between the scent and the action of the play (the march of Birnam Wood) would have helped get around the issue of some people not knowing what pine trees smelled like. Overall, from the information available to me, I would say that the scent

¹⁷³ Mabaso, “Till Birnam Wood... “watching” Shakespeare while blindfolded”

¹⁷⁴ Susan L. Feagin, “Olfaction and Space in the Theatre,” *The British Journal of Aesthetics* 58, no. 2 (April 2018): 140. <https://academic.oup.com/bjaesthetics/article/58/2/131/4953410>

¹⁷⁵ Feagin, “Olfaction and Space in the Theatre,” 141

¹⁷⁶ Feagin, “Olfaction and Space in the Theatre,” 141

design, even for 2014, was an impactful and meaningful part of the show and that the designer did their job well in finding a scent that was so recognizable to many viewers.

Les Parfums de l'Âme

The Le TIR et la Lyre company, headed by French playwright Violin de Carné, developed a bottom-up approach for a new play, starting the writing process from the odor¹⁷⁷. Carné used the odor as a tool to explore human emotions due to smells power with memories¹⁷⁸. It is through odor that she creates specific places, ambiences, and characters¹⁷⁹. In her piece *Les Parfums de l'Âme*, a non-space is created that represents the ephemeral attribute of desires and smells, and each character is defined by specific odors¹⁸⁰.

The piece opens in the hall of a mysterious and futuristic research institute where six persons are waiting, each with a different provenance and background, but with one element in common: they all have lost a person close to them. The institute specializes in recreating smell, so, starting from personal objects like clothing, the researchers can give back to the 'patient' a perfume of their lost beloved. Unfortunately, smelling such odor arouses in the protagonists' vivid memories, making them feel worse, so proceeding with a new life becomes impossible. To get over this mortal limbo, it is realized that, instead of recreating the odor of a lost person, it would be better to make a sort of olfactory

¹⁷⁷ Anna D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," in *Designing with Smell: Practices, Techniques and Challenges*, ed. Victoria Henshaw, Kate Mclean, Dominic Medway, Chris Perkins and Gary Warnaby (Routledge, 2018), 231. <https://www.taylorfrancis.com/books/edit/10.4324/9781315666273/designing-smell-victoria-henshaw-kate-mclean-dominic-medway-chris-perkins-gary-warnaby>

¹⁷⁸ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁷⁹ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸⁰ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

testament. Thus, the researcher can acquire a person's olfactory memories and recreate a smell record of his/her life, so it can be donated to the future generation.¹⁸¹

When entering the theater, the audience was greeted by the smell of incense and the sound of a requiem¹⁸². Aside from the incense, twelve odors in total were released into the audience via Sigmacom machines¹⁸³. Diffusion of the odors throughout the piece was paired to the character of memory they defined¹⁸⁴. One of the key features in the piece is that the use of odor was the driving force of the whole creation and not just a contextualizing or illustrative tool¹⁸⁵. This makes the work an exploration of smell conducted together by the author, perfumer, perfume-releaser, and the actors¹⁸⁶. There was, however, another aspect to this project.

Together, Violaine de Carné and Laurence Fanuel, an independent perfumer, joined a research project promoted by philosopher Chantal Jaquet (l'Université Paris-Sorbonne), neurobiologists Roland Salesse (Institut National de la Recherche Agronomique, Paris) and Didier Trotier (Centre National de la Recherche Scientifique, Paris) looking at the aesthetics of olfaction and its application in contemporary arts¹⁸⁷. In this aspect, after five performances of *Les Parfums de l'Âme*, three hundred nineteen questionnaires and thirty-five interviews were collected from the audience¹⁸⁸. Overall, the evaluation of the piece was positive with seventy-seven percent satisfaction about the odor release system and the experience as a whole¹⁸⁹.

¹⁸¹ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸² D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸³ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸⁴ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸⁵ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸⁶ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸⁷ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸⁸ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

¹⁸⁹ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 231

Les Parfums de l'Âme is the quintessential example of a success story on multiple levels. First, and most obvious, is the audience response; having a positive viewer reception of well over half is amazing numbers for a more experimental piece. From this, we know that the dispersal system worked reliably and that the creative choices read to the audience. Finally, because this play was done in conjunction with a research project, a concerted effort to gather physical evidence of the production's results was made, so it is far easier to mark how well it did. A production like this further provides strong evidence that the range of creative abilities of scent depends on the available technology, and that as long as so much about scent and the olfactory system is unknown, hard statements about the artistic usage of scent, as so far stated by the wider theater community, should be avoided.

A Trip to Japan in Sixteen Minutes:

This production was discussed in the previous chapter. However, it is relevant to this section, and I believe that a further analysis could be beneficial. *A Trip to Japan in Sixteen Minutes* was created by Carl Sadakichi Hartmann, and was performed on November 30, 1902¹⁹⁰. The performance was accompanied by eight scents sequentially released that Hartmann thought could still be recognized individually despite the close line up of smells and would evoke the various locations of the story's journey¹⁹¹. Examples of these scent pairings are Southern France and almonds, Italy and bergamot, India and cedarwood, and Japan and carnations¹⁹². Between the unpredictability of sense memory and some technical difficulties with releasing and clearing the scents, this experience was deemed a critical failure¹⁹³.

¹⁹⁰ Spence, "Scent in the Context of Live Performance," 40

¹⁹¹ Spence, "Scent in the Context of Live Performance," 40

¹⁹² Spence, "Scent in the Context of Live Performance," 40

¹⁹³ Spence, "Scent in the Context of Live Performance," 40

The main point I would like to make with this, is to bring in what we know about the third dimension of odor perception. In my original analysis, I spoke about how scent stereotypes might have been a better choice when it came to identifying countries, which would have used either the first or second dimension. What it appears Hartmann did was use private language odor to impart context to an audience when, by definition, only he would get the full meaning. While the technical issues and his being booed offstage¹⁹⁴ probably did a lot to tank the project, his avenue of scent design definitely did not help.

A Trip to Japan in Sixteen Minutes Revisited:

Unlike its predecessor's performance, which was an abysmal failure where its creator ended half-way through to cat-calls, this show has learned from those mistakes. A six-course smelling of different scents will be filtered into the room from a revised machine used in the original performance. Each smell devised from a real perfumer will be accompanied by its own music and sounds. To truly take in the performance guests will be blindfolded.¹⁹⁵

This is the goldmine I was handed when it came to productions to analyze. A reworked production of an earlier piece, with major differences between the two. Within this analysis are continued references to the original *A Trip to Japan*, but their purpose is to provide an easier comparison between the two.

¹⁹⁴ Tanja M. Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes," *VICE*, December 30, 2013, <https://www.vice.com/en/article/xy4zq7/scent-concert-lets-you-take-an-all-smell-trip-to-japan-in-sixteen-minutes>

¹⁹⁵ Jonathan B, "A Trip to Japan in Sixteen Minutes, Revisited Sold Out," *Things to Do in LA* (blog), December 31, 2013, <https://www.ttdila.com/2013/12/a-trip-to-japan-in-sixteen-minutes.html>

The new iteration of the piece follows Sadakichi Hartmann's first set up with two-minute scent modules¹⁹⁶. Where things begin to deviate is in the path the piece follows. In the original, the audience is taken on a journey by boat starting in New York Harbor, "traveling" for one month, and then ending in Japan; the new iteration starts the audience off in an airport shuttle heading to LAX, "traveling" for eleven to twelve hours, and then landing in Japan¹⁹⁷. 2013's visuals preceded the scent concert with a smellable ticket and program, designed by Micah Hahn, and the installation of the brand-new scent-propagation machine; during the concert itself, the audience is blindfolded¹⁹⁸. This is a major change from the original production, which had visuals during the piece consisting of Hartmann and two actors dressed as geishas¹⁹⁹. Both the original production and this one included a sound element, but again, there are differences. Hartmann's went the simple route with him narrating as the piece went along²⁰⁰. Wilson-Brown's forewent the narration and instead created sounds that mimicked what would be expected in the reality²⁰¹.

Now for the difference I am most interested in: the scents. Hartmann utilized one-note scents (such as the almond, bergamot, carnations, and cedarwood)²⁰² to represent the various points on the journey²⁰³. *Revisited* brought in a perfumer, Sherri Sebastian, to build complex fragrances, or "scent compositions", to convey the mood of each individual module²⁰⁴. These compositions include an ice-cream truck and plants, bourbon and jet fuel, antiseptic, rhubarb and

¹⁹⁶ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

¹⁹⁷ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

¹⁹⁸ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

¹⁹⁹ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

²⁰⁰ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

²⁰¹ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

²⁰² Spence, "Scent in the Context of Live Performance," 40

²⁰³ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

²⁰⁴ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

salty air, and others²⁰⁵. When interviewed about her design choices, Sebastian says that “Fragrances can be linear, layered, textured, rounded, or based on classic pyramid structures. I used natural and synthetic notes to emphasize and enhance different stages of the journey. It was important to honor Sadakichi’s original vision while reinterpreting it with contemporary ingredients.²⁰⁶”. Coming from this, is the most important aspect, the scent dispersal techniques.

There is not a clear account of how Hartmann chose to disperse his scents, but the consensus is that large wooden frames were created with perfume dipped cheesecloths that would then be fanned into the audience – either with a fan or, more likely, by his two actors²⁰⁷. Kamil Beski and Eric Vrymoed designed a device that used a compressed nitrogen bottle to deliver pressure to six atomizers²⁰⁸. These atomizers were outfitted with electric valves and placed in front of blower fans²⁰⁹. There, they connect to polyethylene tubes that ran above the audience and delivered the fragrances²¹⁰. Both the valves and the fans could be controlled with a manual switch or a computer program²¹¹. Despite how complicated the machine sounds, the hard part was actually in figuring a way to get the released fragrances out of the audience²¹². An “air-flow river” and the designs themselves were the solution²¹³. Focusing on the directionality of the scents as they go through the room, pumping them out with large fans, and having the fragrances build on each other just in case of technical difficulties kept things from becoming overwhelming²¹⁴.

²⁰⁵ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²⁰⁶ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²⁰⁷ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²⁰⁸ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²⁰⁹ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²¹⁰ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²¹¹ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²¹² Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²¹³ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

²¹⁴ Laden, “Take an All-Smell Trip to Japan in Sixteen Minutes”

I firmly believe that this production fixed what went wrong with Hartmann's. The biggest quantifiable difference was that everything worked, but that is not what is most interesting. Sebastian seemed to design in the first and second dimensions as opposed to Hartmann's third. Attention was paid to shared experiences and shared effects for each module, and each created fragrance used anywhere from ten to thirty different odors²¹⁵. This complexity of scent rings truer to our abject reality than the single notes of the original production. Blindfolding the audience, I feel, also helped with the scent. Taking the visual aspect out of it would have eliminated any issues that would have arisen about conflicting sensory information. In some productions, that does not matter as much, however, I believe that it would have been a detriment to one such as this where spatial context is constantly and drastically changing.

Summary:

This chapter has most likely just skimmed the surface of the complexity of scent and the challenges that arise because of it. After all, our sense of smell is so powerful, that recent research is finding that "odor may serve as a powerful cue for the recovery of autobiographical memories in Alzheimer's Disease ... These findings demonstrate that odor may be a useful cue to trigger more detailed, vivid, and positive events in AD."²¹⁶ I am currently unaware of any other sense being found to have the potential to do the same.

²¹⁵ Laden, "Take an All-Smell Trip to Japan in Sixteen Minutes"

²¹⁶ Ophélie Glchet and Mohamad El haj, "Emotional and Phenomenological Properties of Odor-Evoked Autobiographical Memories in Alzheimer's Disease," *Brain Sci.* 9 (June 2019): 1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6627121/>

Chapter Three: Base Notes – Going Forward

With this final chapter, I would like to focus on bringing a clearer view to some of the reasons as to why scent has been so neglected by researchers and provide my final visions as to where I think scent design in theater could go in the future. There is a quote from Constance Classen's book, *The Color of Angles: Cosmology, Gender, and the Aesthetic Imagination*, that I think provides a good starting tone for the chapter; "Sight is so endlessly analyzed, and the other senses so consistently ignored, that the five senses would seem to consist of the colonial/patriarchal gaze, the scientific gaze, the erotic gaze, the capitalist gaze and the subversive glance.²¹⁷" We – as humans – describe things using sight-forward language, and it is becoming more and more recognized that doing so for our other senses gives us a skewed account of perception²¹⁸. A rejection of this way of thinking comes from the fact that there are such widespread interactions between our senses, that there is evidence of there being no purely visual experiences to begin with²¹⁹.

Sticking solely with scent, a possible reason for using visual terms to describe odors is the common view that olfaction represents both odors and concrete objects²²⁰. In this view, odors are direct objects of olfaction with concrete particulars being indirect objects ("concrete particulars" and "objects" will mean the same thing)²²¹. As such, a concrete particular is represented olfactorily by representing odors (i.e., smelling the scent of a rose or loaf of bread means one smells the rose or loaf of bread)²²². There is another view, though, that olfaction only

²¹⁷ Bowring, "The Smell of Memory: Sensorial Mnemonics," 157

²¹⁸ Dan Cavedon-Taylor, "Odors, Objects and Olfaction," 1. pdf

²¹⁹ Cavedon-Taylor, "Odors, Objects and Olfaction," 1

²²⁰ Cavedon-Taylor, "Odors, Objects and Olfaction," 2

²²¹ Cavedon-Taylor, "Odors, Objects and Olfaction," 2

²²² Cavedon-Taylor, "Odors, Objects and Olfaction," 2

represents odors and not objects; this is called olfactory austerity²²³. If this view is true, then it is one more reason to reject visuo-centric thinking²²⁴.

There is yet another view, which Cavedon-Taylor finds to be below olfactory austerity, called the Individual Theory of Odor. This theory is best explained in the following:

“When a particularly unpleasant odor is before us, we waft our hands in front of our noses to move it along, or to disperse the cloud. In doing so, we take ourselves to be moving the odor itself, which we believe to spatially extend before us. Crucially, we don’t simply take ourselves to be moving a bearer of the odor, a thing that has, or which is merely qualified by, the offending smell. Rather, odors are *themselves* thought to move, spread through rooms, and so on. And insofar as we believe that odors can be destroyed, we are committed to thinking of odors as having temporal duration no less than spatial extent.²²⁵”

The Individual Theory of Odor is where we get household products that are marketed as odor eliminating²²⁶. It meshes the idea of odor and object.

In addition to there being multiple views and theories, more than what I have mentioned above, there is another reason as to why scent has been largely avoided in design, and that is the difficulty in its specificity. Scent has lost out to visuality due to its difficulty in representation and realization of design²²⁷. In the West, there have been three main attempts to categorize smell that is based on primary odors²²⁸. In the mid-eighteenth century, Carolus Linnaeus, the Swedish

²²³ Cavedon-Taylor, “Odors, Objects and Olfaction,” 2

²²⁴ Cavedon-Taylor, “Odors, Objects and Olfaction,” 2

²²⁵ Cavedon-Taylor, “Odors, Objects and Olfaction,” 6

²²⁶ Cavedon-Taylor, “Odors, Objects and Olfaction,” 6

²²⁷ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 160

²²⁸ Gheorghita Ghinea and Oluwakemi A. Ademoye, “Olfaction-Enhanced Multimedia,” *Multimedia Tools and Applications* 55 (2011): 5. <https://bura.brunel.ac.uk/bitstream/2438/6980/5/Fulltext.pdf>

botanist who gave us the Taxonomy Classification System (Kingdom, Phylum, Order, Class, Family, Genus, Species), also created a seven-category classification scheme for scents²²⁹. His categories are comprised of Aromatic, Fragrant, Ambrosiac (Musky), Alliaceous (Garlicky), Hircine (Goaty), Foul/Repulsive, and Nauseous²³⁰²³¹. He based these classes on a pleasantness scale of pleasant, unpleasant, and pleasant for some unpleasant for others²³². Next is Hans Henning’s Smell Prism from 1916, which had just six base odor references – Spicy, Resinous, Floral, Foul, Fruity, and Burnt²³³. The most recent of the three is a nine-category table from Dutch scientist Hendrik Zwaardemaker in 1925²³⁴.

Table 1.: Zwaardemaker’s (1925) complete 9-category odor classification system.¹⁰

1. Etherial [sic]: e.g. acetone, chloroform, ethyl ether, ethyl acetate
 2. Aromatic
Subclasses:
 - a. Camphrous e.g. camphor, eucalyptol, pinene
 - b. Spicy e.g. eugenol
 - c. Anisic e.g. anisole, thymol, menthol
 - d. Citric e.g. citral, geraniol
 - e. Amygdalate e.g. benzaldehyde, nitrobenzene
- Others e.g. laurel, resins, lemon, rose, cinnamon, lavender, mint, majoram
3. Balsamic
Subclasses:
 - a. Flower perfumes e.g. jasmine, orange blossom
 - b. Lily e.g. ionone, violet root
 - c. Vanilla
 4. Amber-musk
 5. Allicious
Subclasses:
 - a. Garlic e.g. acetylene, H₂S, ethyl sulphide, mercaptan
 - b. Cacodyl e.g. trimethylamine
 - c. Haologen e.g. bromine, iodine
 6. Empyreumatic e.g. roasted coffee, toasted bread, tobacco smoke, tar, benzol, phenyl xylo, toluol, cresol, guaiacol, naphthalene, aniline.
 7. Hircine e.g. caproic acid, other fatty acids, cheese, sweat, bilberry, cat’s urine, perhaps also vaginal and sperm odour, chestnut and barberry.
 8. Repulsive suffocating e.g. odours of the solanaceae and of coriander, some orchids, some bugs; narcotic odours.
 9. Nauseous e.g. rotten meat, indole, skatole, carrion flower.

Figure 1. Zwaardemaker’s Classification System, 1925²³⁵.

²²⁹ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 159

²³⁰ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 159

²³¹ Ghinea and Ademoye, “Olfaction-Enhanced Multimedia,” 5

²³² Ghinea and Ademoye, “Olfaction-Enhanced Multimedia,” 5

²³³ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 159

²³⁴ Bowring, “The Smell of Memory: Sensorial Mnemonics,” 159

²³⁵ D.G. Laing, R.L. Doty, and W Breipohl, “Zwaardemaker’s (1925) complete 9-category odor classification system,” *The Human Sense of Smell* (1992): 98, quoted in Dr. Jacky Bowring, “The Smell of Memory: Sensorial Mnemonics,” *The Landscape Architect, IFLA Conference Papers* (May 2006): 160

The Zwaardemaker Smell System is an extension of Linnaeus's Scheme with two additions: Ethereal and Empyreumatic (burnt organic matter, i.e., tobacco smoke or roasted coffee)²³⁶. Outside of chemical formulas, despite numerous efforts, it is impossible to record odors as it is a "fugitive component of environmental experience."²³⁷ Its difficulty to predict and specify comes from it being highly susceptible to atmospheric circumstances²³⁸. Compared to visuality's ease of imagining and communicating, as well as how much easier it is to transport²³⁹, and it becomes much clearer as to why productions would want to avoid attempting scent. It is a shame as a smell's strength is in its ability to affect people emotionally as opposed to intellectually through its transformation of spatial experience²⁴⁰. There is, however, something of another way of organizing scents that, at least artistically, has some merit.

In 1855, Septimus Piesse noted in a treatise that, like with sound, different odors could blend together harmoniously in a way that brought feelings of pleasure²⁴¹. Following this idea, he created the *Gamut of Odors* (Figure 1), a scale of correspondence between sounds and odors, convinced that "there is, as it were, an octave of odors like an octave in music."²⁴² This idea of his is still a key component in modern perfumery²⁴³.

²³⁶ Ghinea and Ademoye, "Olfaction-Enhanced Multimedia," 5

²³⁷ Bowring, "The Smell of Memory: Sensorial Mnemonics," 160

²³⁸ Bowring, "The Smell of Memory: Sensorial Mnemonics," 160

²³⁹ Bowring, "The Smell of Memory: Sensorial Mnemonics," 160

²⁴⁰ Bowring, "The Smell of Memory: Sensorial Mnemonics," 165

²⁴¹ Charles Spence and Nicola Di Stefano, "Crossmodal Harmony: Looking for the Meaning of Harmony Beyond Hearing," *i-Perception* 13, no. 1 (January-February 2022): 12-13.

<https://journals.sagepub.com/doi/10.1177/20416695211073817>

²⁴² Spence and Stefano, "Crossmodal Harmony: Looking for the Meaning of Harmony Beyond Hearing," 13

²⁴³ Spence and Stefano, "Crossmodal harmony: Looking for the Meaning Harmony Beyond Hearing," 13

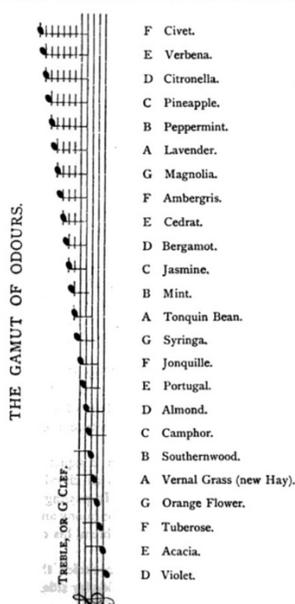
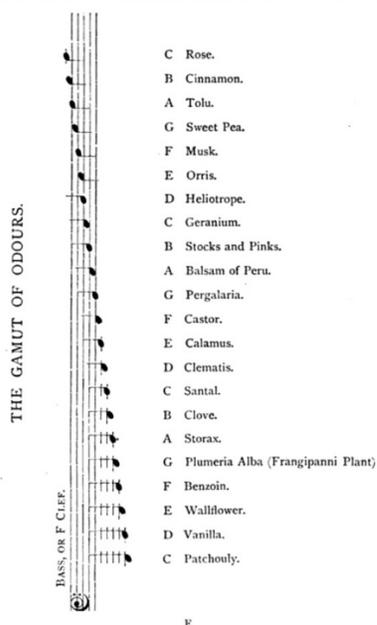


Figure 2. Piesse's Gamut of Odors from the Fourth Ed., 1879²⁴⁴

The idea behind the gamut is that the odors are paired with notes based on the effect it has on the olfactory system²⁴⁵. Piesse chose his initial odors from those that are mostly used in perfumery, though he asserts that “I wish it to be understood that all odours, from whatever source derived, may be similarly classified. I know of no odour in a chemical laboratory – and they are pretty numerous – to which I could not assign its corresponding key.²⁴⁶” He goes on to say that a harmonious perfume would form a chord when keeping the gamut in mind²⁴⁷. There are three examples given, with odors listed from Bass to Treble: Bouquet of chord G with Pergalaria, Sweet Pea, Violet, Tuberose, Orange Flower, and Southernwood; Bouquet of chord C with

²⁴⁴ Piesse, *The Art of Perfumery*, 48 & 49

²⁴⁵ G.W. Septimus Piesse, *The Art of Perfumery and the Methods of Obtaining the Odours of Plants, the Growth and General Flower Farm System of Raising Fragrant Herbs with Instructions for the Manufacture of Perfumes for the Handkerchief, Scented Powders, Odours Vinegars and Salts, Snuff, Dentifrices, Cosmetics, Perfumed Soap, etc. To Which is Added an Appendix on Preparing Artificial Fruit-Essences &c.* Fourth edition (London: Longmans, Green, and Co., 1879), 47, <https://play.google.com/books/reader?id=q2gDAAAAQAAJ&pg=GBS.PR12&hl=en>

²⁴⁶ Piesse, *The Art of Perfumery*, 47

²⁴⁷ Piesse, *The Art of Perfumery*, 47

Santal, Geranium, Acacia, Orange Flower, and Camphor; and Bouquet of chord F with Musk, Rose, Tuberose, Tonquin Bean, Camphor, and Jonquil²⁴⁸. What Piesse is not suggesting with his gamut is that there are harmonious sensations that extend from olfaction to audition, or the other way around²⁴⁹.

Perfumer Sophia Grojsman in an interview with Ackerman said, “Perfumery is closely related to music. You will have simple fragrances, simple accords made from two or three items, and it will be like a two- or three-piece band. And then you have a multiple accord put together, and it becomes a big modern orchestra. In a strange way, creating a fragrance is similar to composing music, because there is also a similarity in finding the “proper” accords. You don’t want anything being overpowering. You want it to be harmonious. One of the most important parts of putting a creation together is harmony.²⁵⁰” When it comes to harmony in olfaction, there seems to be an implication of balance between component parts²⁵¹. This suggests that similar perception grouping rules that have been documented with audition also applies to olfaction²⁵². One difference between the two, however, is that scientists have as of yet been unable to find quantitative data underpinning the harmonious mixing of odors; perfumists must instead achieve harmony through experience and trial-and-error²⁵³.

Piesse’s *Gamut of Odors*, which is a scale of crossmodal correspondences between sound and odors, opens up a previously (for me) unthought of application of scent for theatre, specifically for productions that have music specific to it. New combinations based off of the songs could be created, like with candles. Candles can have three layers of notes – base, middle,

²⁴⁸ Piesse, *The Art of Perfumery*, 47

²⁴⁹ Spence and Stefano, “Crossmodal Harmony: Looking for the Meaning of Harmony Beyond Hearing,” 13

²⁵⁰ Spence and Stefano, “Crossmodal Harmony: Looking for the Meaning of Harmony Beyond Hearing,” 13-14

²⁵¹ Spence and Stefano, “Crossmodal Harmony: Looking for the Meaning of Harmony Beyond Hearing,” 14

²⁵² Spence and Stefano, “Crossmodal Harmony: Looking for the Meaning of Harmony Beyond Hearing,” 14

²⁵³ Spence and Stefano, “Crossmodal Harmony: Looking for the Meaning of Harmony Beyond Hearing,” 14

and top – which could be created from the most reoccurring notes of a song, as Piesse’s gamut covers both Bass and Treble clefs. It makes me wonder what some of the more well-known musical theatre songs smell like and conversely, what some of my favorite candles sound like. But would this work harmoniously for a production in real time?

The brain’s ability to notice other sensations may be influenced by another, distracting sensation, but this can vary depending on the stimuli present and the context of the environment²⁵⁴. For example, a higher concentration of odorants may be needed if there are loud sound effects, or the scents could be more easily recognized by a well-designed set²⁵⁵. Adjustments would need to be made throughout the process in order to meet the director’s objective²⁵⁶. These relationships between scent and the other design areas need to be evaluated in any installation or presentation to consider the potential impact on the audience²⁵⁷.

Olfactory fatigue is a short-term adaptation to odors. As one is exposed to a constant presentation of an odor over time, it is a common experience that the odor will decrease in perceived intensity. An example most people have experienced is entering a home or business and noticing a distinct odor, but then after a short period of time, that odor goes into the background and is no longer perceived. Our olfactory system saves us from information overload by decreasing perceptions of what it deems unimportant in order to be prepared for anything new or changing. In this process, over time, as the odor perception is decreasing, it is possible the character of the odor could also shift slightly.

²⁵⁴ Michael McGinley and Charles McGinley, “Olfactory Design Elements in Theater,” in *Designing with Smell: Practices, Techniques and Challenges*, ed. Victoria Henshaw, Kate McLean, Dominic Medway, Chris Perkins and Gary Warnaby (Routledge, 2018), 222.

<https://www.taylorfrancis.com/books/edit/10.4324/9781315666273/designing-smell-victoria-henshaw-kate-mclean-dominic-medway-chris-perkins-gary-warnaby>

²⁵⁵ McGinley and McGinley, “Olfactory Design Elements in Theater,” 222

²⁵⁶ McGinley and McGinley, “Olfactory Design Elements in Theater,” 222

²⁵⁷ McGinley and McGinley, “Olfactory Design Elements in Theater,” 222

For example, a base note may become more prominent as the perception of the top note decreases. Additionally, exposure to multiple cross-modal stimuli could also lead to another type of adaptation or fatigue. Loud sounds or bright lights may distract an individual, and thus decrease his/her perception of the scent.²⁵⁸

Optimizing the use of scents in consideration of how and when fatigue would set in is something that can be used to the advantage of the art and design process²⁵⁹. An example of this would be decreasing the scent as the action increases, allowing both to have their time to shine²⁶⁰.

It should not need to be said, but as with other design choices, scent should always add artistic value to the performance²⁶¹. Scent could create buzz about a performance simply by just being included, but it should be integrated with the same care as the other areas²⁶².

When scent can be manipulated in an overall production design as an artistic device, it has immense artistic value²⁶³. A familiar example of this can be found with sound - using slow music from an onstage radio while a chaotic fight scene takes place²⁶⁴. For scent, Noah Bremer stated: "We don't always want to have a scene where somebody is being butchered and there is the smell of blood. Maybe we want the smell of lilacs. It's weird and disorientating."²⁶⁵

Creative and counter-intuitive use of scent can be used to surprise and disturb the audience²⁶⁶.

In the theatrical space, olfactory communication has always been considered something of an extra addition to the other sensory channels²⁶⁷. According to Bane, this could explain why

²⁵⁸ McGinley and McGinley, "Olfactory Design Elements in Theater," 223

²⁵⁹ McGinley and McGinley, "Olfactory Design Elements in Theater," 223

²⁶⁰ McGinley and McGinley, "Olfactory Design Elements in Theater," 223

²⁶¹ McGinley and McGinley, "Olfactory Design Elements in Theater," 224

²⁶² McGinley and McGinley, "Olfactory Design Elements in Theater," 224

²⁶³ McGinley and McGinley, "Olfactory Design Elements in Theater," 225

²⁶⁴ McGinley and McGinley, "Olfactory Design Elements in Theater," 225

²⁶⁵ McGinley and McGinley, "Olfactory Design Elements in Theater," 225

²⁶⁶ McGinley and McGinley, "Olfactory Design Elements in Theater," 225

²⁶⁷ D'Errico, "The Nose Onstage: Olfactory Perceptions and Theatrical Dimension," 228-229

there is not a critical understanding, semiotic analysis, or systematic description of smell in performative space²⁶⁸. Therefore, “smell design in theatrical space often involves many different ‘experiments,’ without a proper analysis of the use and meanings of odor in such contexts. We can probably include this consideration in the explanation why the modern Western theater, despite several examples of the use of odor onstage, appears anosmic.²⁶⁹”

There are six different ways that Banes has highlighted odor can be used in performance; these categories are not mutually exclusive, and smell can perform more than one function at once²⁷⁰. First function is to illustrate characters, actions, places, and words²⁷¹. Second is to evoke an ambience or mood²⁷². Third is to contrast or complement with the other sensory channels²⁷³. Fourth is summoning specific memories²⁷⁴. Fifth is framing performance as a ritual, and sixth is to serve as a distancing device where it deliberately undermines what is happening on stage²⁷⁵. The fifth and sixth categories have less to do with representational or illustrative purposes and more with framing and contextualization²⁷⁶.

This leads to another question of whether odors could replace sound in some capacity as a method of storytelling in conjunction with movement. Like in a dance piece where the body is telling a story that is guided by the music or sounds chosen by the choreographer. I feel like potentially, even if not with Piesse’s gamut, it could be possible. Maybe sound would still have to exist, but not throughout the whole piece. It could start off with just sound, then somewhere

²⁶⁸ D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

²⁶⁹ D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

²⁷⁰ D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

²⁷¹ D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

²⁷² D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

²⁷³ D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

²⁷⁴ D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

²⁷⁵ D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

²⁷⁶ D’Errico, “The Nose Onstage: Olfactory Perceptions and Theatrical Dimension,” 229

in the middle, scent could be added in conjunction with the audio. Then, towards the last third, the sound would be taken out, leaving only the scent. Depending on how the piece is, new scent connections could be temporarily made in a way that aligns the audience's individual perceptions with the designer's perception of odor – tackling some of the challenges discussed in Chapter Two.

Now, I am currently not in the position to do an involved experiment with Piesse's *Gamut*, but I am still endlessly curious about the potential crossover between scent and sound. On that *note*, I have set forth to create a miniature demonstration/experiment that would act as a stepping stone for further play. I have chosen an essential oil and two perfumes that use only the odors displayed on the gamut in *The art of perfumery and the methods of obtaining the odors of plants*. From their broken-down notes, short musical compositions were made using only those odor's corresponding musical notes. Before going further into the work and its end results, I would like to clarify that I am neither a trained perfumist nor a composer, though musical notation and different aspects of theory are not unfamiliar to me.

The Experiment:

I wanted to see if there was a deeper correlation between musical notes and the odors that Piesse assigned to them than just a way to explain harmony in perfumery.

Parameters:

To acquire three liquids whose composing scents were only those found in Piesse's *Gamut*, or as close as could be gotten. From there, a short musical composition would be made for each of the three samples using the corresponding notes. There would be two phases to the

compositions: the first derived purely from the written list of scents provided by the company, and the second made with the actual smell of the liquids in mind.

The Scents:

All three samples were purchased online from The Fragrance Shop. I have gone ahead and broken them down with the liquid type, name, circumstantial use, and fragrance notes paired with their music notes.

- Essential Oil²⁷⁷: *Libra* (Anytime)
 - Magnolia *G6*, Lilac *G5*, Musk *F3*
- Perfume One²⁷⁸: *Love in White* for women by Creed type (Romantic)
 - Top: Spanish Orange Zest *G4*, Bulgarian Rose *C4*
 - Middle: Italian Jasmine *C6*, French Daffodils *F5*, Guatemala Magnolia *G6*, Asian Rice Husk , Egyptian Iris *E3*
 - Base: Java Vanilla *D1*, Calabria Ambergris *F6*, Mysore Sandalwood *C2*
- Perfume Two²⁷⁹: *Sublime Vanille* for men and women by Creed type (Evening/Casual)
 - Top: Vanilla *D1*, Tahitian Vanilla Orchid *D#1*
 - Middle: Tonka Bean *A6*
 - Base: Musk *F3*, Bergamot *D6*, Calabrian Lemon *D7*, Orange *G4*

²⁷⁷ The Fragrance Shop, *Libra*, purchased February 2023, oil, Carrboro NC

²⁷⁸ The Fragrance Shop, *Love in White for women by Creed type*, purchased February 2023, oil, Carrboro NC

²⁷⁹ The Fragrance Shop, *Sublime Vanille for men and women by Creed type*, purchased February 2023, oil, Carrboro NC

The fragrance notes are labeled as top, middle, or base depending on the order in which they are most noticeable during use. Here are my thoughts on the three sample scents.

The Essential Oil came across as sharp and slightly bothersome but with a very consistent fragrance through time. Perfume One was delicate almost to the point of being unobtrusive with a very floral impression at the initial application and an appearance of vanilla at the end. Lastly, Perfume Two, when compared to the other samples, was the second most noticeable with an extremely obvious presence of vanilla at the onset.

Compositions:

In the first initial compositions, all of the fragrance notes were composed on a single grand staff. Musical notes were placed in order of the listed fragrance notes on the website. This worked well for the essential oil but not the two perfumes (see figures 4 and 6). Perfumes, unlike essential oils, are made to morph over the time of wear, and this compositional choice did not allow for that nuance of fragrance shift. The composition came purely from reading words on a screen and did not engage in any way with the olfactory sense.

For the final compositions, I added four more parts to the original grand staff to better track the three layers of fragrance notes. This final try improved upon the representations of the perfumes but did nothing for the essential oil. The following are my brief impressions of the final compositions as they stand on their own.

The Essential Oil's²⁸⁰ (see figure 3) was a little jarring to the ear and did not offer anything new to discover with subsequent listens. There was no nuance or growth in the piece, and while not entirely unpleasant, it inspired no desire for more. Perfume One's²⁸¹ (see figure

²⁸⁰ Katherine Holland, "Gamut of Odors," score, 2023, personal collection

²⁸¹ Holland, "Gamut of Odors"

5) was slightly busy with some nice resolving moments within. This one did entice further listening, but it was more for attempting to get a feel for the piece. Overall, not unpleasant, but a little clunky. Finally, Perfume Two's²⁸² (see figure 7) came across in an ominous way similar to how shark attacks are portrayed on screen. The top grand staff's notes are highly present, and as a whole, the piece feels as if it should only exist within a specific context.



Figure 3. *Essential Oil*

²⁸² Holland, "Gamut of Odors"

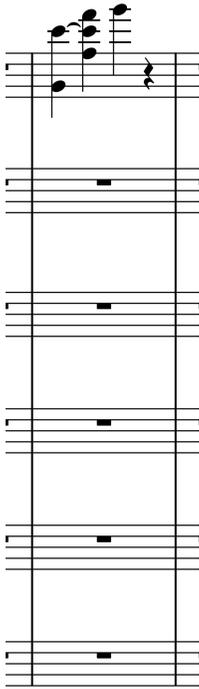


Figure 4. Perfume One IC



Figure 5. Perfume One FC



Figure 6. Perfume Two IC



Figure 7. Perfume Two FC

Errors:

Like with all experiments, despite one's best efforts, not everything goes to plan, and at the end of the process, a look at what went wrong needs to be performed to determine if the achieved results are still viable. There were four instances found in mine. One, ingredients in the two perfumes were mostly not exactly like those listed in the *Gamut*. For most, there was far more specificity in the samples procured than Piesse had listed. Two, Asian Rice Husk was not one of the scents initially identified by Piesse, however, no research I did could tell me what it smelt like nor what its purpose within a perfume was. Most results talked about the smell of cooking rice or the rice husk's usefulness as an exfoliant. A decision was made to ignore this ingredient for the time being. Three, due to a common inability for people to distinguish between lemon, lemongrass, and citronella, the Calabrian Lemon was paired with the *Gamut's* Citronella. Lastly, maybe not necessarily an error, but I am neither trained in music composition nor perfumery, so descriptions of the scents and the music are not as specific as they most likely should be.

Results:

Excitingly, the musical pieces and their inspirational samples do favor each other in a way. For Perfumes One and Two, these are approximate results due to the changes I made. However, what is missing audibly would most likely be fixed with the errors corrected. Such a thing is unnecessary for this experiment as the goal was to see if a deeper connection between the scents and music was possible. Any further study, though, would require these initial errors to be solved. Despite this, I have found a sufficient enough degree of similarity between the

sounds created and their corresponding scents that I believe translations between sound and smell to be a viable future design tool.

Looking Ahead:

What is left is one final question, where am I going with all of this? All of these pages and the months of work that went into this are to provide a base foundation for a third additional element: movement. Usually, movement is choreographed to some sort of sound, either music, spoken word, or breath. What I want to discover is if scents can affect movement in the same way without the use of real or imagined sound. At the moment, however, if such a thing is possible, I am inclined to believe that an audience would need to be acclimated to a differently sensed movement performance. This is where Piesse's *Gamut* is so vital. Potentially, the performance would be split into three distinct sections. In the first section, it would have the traditional pairing of sight and sound. Moving into the second section, the corresponding scents would be included. Finally, in the third, the sound would be removed entirely, allowing just the scents and movements to exist together. I do not know if this would be true in actuality, but I think doing it in this way would help to adjust the brain's ability to process what it is experiencing.

Conclusion:

Currently, there are not any rules or protocols involving scent that theaters and productions can follow. However, I do have a few suggestions. For the consideration of audience members, a general warning of the use of scent in a production can be posted on the page where tickets are purchased as well as in the playbill. Signs outside of the theater can point

audience member to a set aside space where samples of the scents used in the show can be accessed for them to smell beforehand if they so choose. The offering of noseplugs might even be an option. For getting a scent through an audience, productions would need to decide if they want to go for a more personalized experience (the scent goes directly to each member of the audience either in the form a something like a scratch-and-sniff or direct piping) or a generalized experience (scent pushed into the room as a whole). This later option then brings up the question as to how to deal with lingering scents. If the scent is not supposed to linger in the room, an efficient way of delivering a neutralizer would need to be planned for. Above all, a space should be made for there to be a designated scent designer, not a perfumist, on productions using that medium. Someone who primarily looks at fragrances as a large, storytelling device.

There is an entire hidden world of scent experimentation and usage out there, and I think it has to do with people's instinctive response to olfactory sensations. One of the first responses often given usually has to do with the fear of certain smells being used or a statement regarding their sensitivity to scent. All of that is valid, however, the societal reaction to those statements veers sharply into sanitization while its response to concerns with the other senses is for the affected person to take care of themselves. So either a taming of the knee-jerk reaction to scent usage needs to happen, or the care taken with the other senses needs to be more collaborative. For myself, I think both need to happen. Greater concern needs to be acted upon when it comes to taste, touch, sound, and sight (the current condemnation of "picky eaters" or those who obviously react to repetitive or loud sounds). At the same time, we need to work at ingraining the knowledge of how scent is so highly personalized into the general psyche and have more of the onus of protection be on a personal level. Both of these aspects should exist more in a middle ground than they currently do. It is this current reality that has helped to push scent

research off to the side and kept us as artists into staying in the visual and audible areas of creation. I think that with all of this together, theater has the chance to truly absorb an audience and impact them in a way on par with today's movie theaters and AR/VR.

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