

# Respiration, roses, and the secret life of paintings in a greenhouse

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*Respiration Paintings* is a set of eighteen abstract paintings specifically created for the greenhouse of The Frick Pittsburgh. Designed by the architecture firm of Alden and Harlow, the greenhouse is a classic example of early steel and glass architecture. The greenhouse was built for the Frick family in 1897, placing its creation at least a decade before the first modern abstract paintings. Never would it have occurred to the architects or the Fricks that over a century later this airy space would come to house an installation of non-objective compositions made from essential plant oils.

The six-month exhibition comprises abstract paintings sited in the greenhouse, where they are displayed with plants and together suffused with natural light. Some of the paintings are made from oils distilled from plants and used for aromatherapy and natural perfumery; others are oxidized paintings made from urine, salt and vinegar on copper. In choosing to use rose, lemon and jasmine plants, my purpose was to create a continuum of matter between the living plants on display in the space and their essential plant oil in the air, emanating from the paintings. Plants and paintings, plants and people, people and paintings: We share many of the same elements, like carbon and even

proteins. The paintings are in a sense “alive,” made from “living” materials, and they continue to interact with their environment and change over time, further shifting our perceptual connection to them. In *Respiration Paintings*, this mutability is given form. Each painting does not exist solely in the material of the painting, nor solely in the viewer’s perception, but rather in the space between the painting and the viewer, between matter and cognition; it exists in the air.

We often don’t notice air until we smell it. In the greenhouse, the air is pregnant with scent. As soon as we enter it we are aware of the dense humidity of “plants breathing.” The word respiration has two meanings. Foremost is the act of breathing, “the inhalation and the exhalation of air.” Respiration on the cellular level also means the “process by which cells break down sugar to obtain energy.” All living organisms respire, but only plants can transform the energy of the sun directly into usable energy through the respiration process. With the combination of photosynthesis and respiration, it could be said plants “eat light.” As the only beings that can directly transform the energy of the sun into food, plants are at the base of the food chain and the source of life on our planet. Plants also made our planet

habitable. Over 2 billion years ago, in what scientists call *The Great Oxidation Event*, blue-green algae in the sea produced enough free oxygen to transform the earth's environment, ultimately making it habitable for life forms like us.

In 1973, Peter Tompkins and Christopher Bird published *The Secret Life of Plants*. The best-selling book (and documentary film by the same title) captivated the popular imagination in proposing the theory that plants are sentient. The authors call the life of plants "secret" because we do not "see" their lives with our eyes; it takes another kind of "seeing" with feelings. In the movie version, we also "see" plants in a new way with time-lapse photography. We see that when sped up, to match the speed at which we move, plant movement looks a lot like our own. Since the book's publication, the field of plant communication has found firmer scientific footing. Though plants do not have nervous systems, scientists have shown that plants communicate through the air by releasing odorous airborne chemicals, technically referred to as VOCs (volatile organic compounds). Plants use scents as protection against insect predators. The scents plants release can drive away certain insects, or else send a distress call to other insects that will respond and eat the pests. Scientists have discovered that plants also communicate through underground networks of mycorrhiza fungi that connect through the roots of plants. These underground webs connect plants allowing them to transfer water, carbon, nitrogen and other nutrients and minerals. These forms of plant communication reveal that plants are attuned to one another and to their environments. It may not be "feeling" in the human sense of the word, but it is a language of communication and connection. The discovery that plants participate in non-verbal forms of communication is a message to us, a reminder that we too, as life forms on this planet, communicate non-verbally with each other and with the cosmos.

The authors of *The Secret Life of Plants* propose a "supersensible"—as in, "being above or beyond perception by the senses"—world of plants. Today scientists consider this book New Age pseudoscience, but its legacy lives on, as does its underlying message of attunement. The premises of Tompkins and Byrd remain accepted: that we cannot "see" plants communicating with the naked eye; we need to communicate with plants with a combination of our senses; and with our feelings.

This "secret" life of plants and the idea of a supersensible world connects directly with the "roots" of abstract painting. Wassily

Kandinsky historically has been considered the first abstract painter. He made paintings that were not pictures of people, places or things, but rather expressions of the artist's "inner need." Kandinsky claimed to be a synaesthete, which means that his senses were interconnected. In his case, his perception of color was linked to his hearing. When he saw certain colors, he heard certain sounds. Kandinsky's synesthesia is what opened the doors of perception for him, giving him the experience of sound and color as detachable from specific things, and a deeper awareness of his own subjectivity. In *Concerning the Spiritual in Art*, 1912, Kandinsky describes the perception of color as two-fold, initially a physical sensation provoked by material objects, but with attunement, the sensitive viewer could have a second level experience of color. Kandinsky wrote, "*to a more sensitive soul the effect of colours is deeper and intensely moving. And so we come to the second main result of looking at colours: their psychic effect. They produce a corresponding spiritual vibration...*" Both books, one about plants, one about art, had similar aims, to provide access to the experience of attunement and sensorial interconnection.

In recent scholarship, Kandinsky has been called a "pseudo-synasthete." It is believed he did not actually have synesthesia but rather used it as a conceptual model in his art. That he may not have really had the condition supports the idea that in fact everyone has synesthesia to a degree. For everyone, the senses are interconnected even if there is not a one-to-one correspondence. *Respiration Paintings* aims to provide an intersensory experience for anyone who visits it. It combines the sense of sight and the sense of smell into one simultaneous and interconnected experience.

In *Respiration Paintings*, rose is used as a color and a smell. Long symbolic of beauty and love, the rose is an abstraction: a flower, a color, a smell and an idea. In *Respiration Paintings*, the rose is a flower, growing in the greenhouse. It is a color, used as paint (and as a color it exists as a wavelength of light). It is smell, used as an essential oil (existing in the air as molecules). It is used as a proper name in the paintings (for instance the title *Rose Grid*) and it is an idea (a symbol of love and beauty) that has the power to arouse feelings in us.

The rose essential oils that are used in this installation are grown on farms in Turkey and Bulgaria where roses have been farmed and distilled for generations. Most of the oils in *Respiration*

Painting are steam distilled. Steam distillation is a process by which solid plant matter is cooked at high heat producing a steam, which is then cooled, turning it into a liquid. The distiller consists of two chambers connected by a tube. They are traditionally made of copper and called alembics. Alembics date back to medieval alchemy and were used by alchemists to search for the *prima materia*, a substance they believed to be the primordial substance of life. Alchemists were trying to find the immaterial essence of life, the substance in matter that animates it. *Respiration Paintings* participates in this alchemical history. Plant oils can be thought of as a form of embodied light since plants "eat light." With this metaphor, adding sunlight to oil paint makes the painted matter more animated.

## Description of Respiration Paintings and Installation

When selecting plant oils to use in paintings I start by matching scent and color, like the scent of rose and the color red. I mix the plant oil into the paint, as a medium, creating a colored paint that is also fragrant. For instance, I made *Rose Grid*, 2017 by mixing a variety of red pigments with two plants oils: rose otto and geranium rose essential oil. The plant oils resonate with the pigment, augmenting the vivacity of its color by increasing its vibration. Since plants "eat light," in a sense their distilled essence can be thought of as light in liquid form. By adding the plant oil to the oil paint, I am adding "liquid light." Using the actual rose matter, and combining it with rose-color, this painting is at once both an abstraction of a rose, and a *manifestation* of one.

Along with the *Rose Grid*, there is *Rose Chord*, *Rose Monochrome*, *Persian Rose Monochrome* and *Rose Painting* all made by blending rose essential oil and rose-colored paint, all manifestations of rose, in different forms. These different forms are likewise different types of paintings; there are *Grid Paintings*, *Poured Paintings*, *Oxidation Paintings* and *Monochromes*. Each employs the language of abstraction, if differently. The grid is the mainstay. It is always there from the beginning in the weave of the canvas. The grid is itself an abstraction, defined as a coordinate system made of straight lines at 90-degree angles. The grid is also a term used to define the system of electrical distribution, which could be thought of analogously to the "supersensible" interconnected world of plants and colors. In my work the grid is always embodied, and as embodied, it is

living. I make the grid either with graphite, a pure form of carbon essential to organic life, or with paint infused with plant oils.

The horizontal and vertical also manifests in how I make the paintings. While I make the *Grid Paintings* vertically, standing up with the painting on the wall, I make the *Poured Paintings* horizontally, with the painting on the floor. For instance, in *Supermoon Painting*, 2016, I poured lemon, sandalwood, cardamom, jasmine and neroli oils into a gold-green pigment. I poured this painting on the eve of November 14th 2016, during a "supermoon." *Supermoon* is a term used when this full moon looks particularly large. This fall's supermoon was the moon's closest encounter with the earth in 68 years. I chose this evening to harness the gravitational forces from the moon. When I pour the plant oils into the pigment, they exert an agency. I select the oils and I do the pouring, but once poured, I do not manipulate the outcome. It is as if the plant oils make their own image, and the image they make is mysteriously plant-like. The plant oils in the different paintings are used as mediums in the multiple senses of the word—both as an intervening substance and an intervening agent. In all the types of paintings, the plant oils are an animating power.

The grid in my work is a formal idea as well as a process. To give an example of this, I made *Oxidized Grid Painting*, 2016 by pouring the urine mixture onto a copper ground, and letting it oxidize on the floor. The painting developed into a pattern of organic forms arranged in a grid. I had the painting on the floor for several days and I thought it was dry, so I hung it on the wall. I had another painting with a copper ground resting on the floor below it. There must have been some moisture below the surface of the oxidation that I could not see, because when I left the studio, and returned a few days later, the *Oxidized Grid Painting* had dripped onto the prepared ground beneath it. The drips fell in vertical lines over the horizontal lines of the ground, creating a new painting. I call it *Painting Made by Another Painting*. The way the drips fell gives them the feeling of being suspended in time, as if they were caught in the act of falling. The grid, like the rose, is many things: the forces of nature, an idea, a human construction, a device used to order space, and so on. It is in the clothes we wear, the houses we live in, and the paintings we look at it. The grid is in the architecture of the greenhouse. The steel framework supporting the glass panes is a grid. The grid is in some ways like the air, it is all around us, and yet we don't always notice it.

Siting the paintings in the greenhouse is unlike displaying them in a gallery or museum. In those “white box” environments the climate and the artificial lighting are highly controlled. The institutional “white box” creates a “pure” environment to experience art. Seeing paintings in a greenhouse is a very different kind of context. In the greenhouse, the paintings are bathed in natural light. They will change in appearance as the light moves from morning to evening, on days with sun or cloud cover, and as the seasons change. The oil paintings made with plant oils will invisibly change as the essential plant oils continue to evaporate, a process that can take months to years, depending on which oils are used. Some of the more resinous oils such as sandalwood and patchouli are very long lasting, whereas the citrus and floral oils such as lemon and jasmine are much more fleeting. When the oil paint dries, the painting becomes stable. Exposing the paintings to excessive heat and humidity is a risk, but the experience is worth the introduction of such uncertain fates.

In contrast to the oil paintings, the oxidation paintings will continue to visibly change. The urine mixture oxidizes the copper creating a verdigris patina. Unlike oil paint, the oxidation does not stabilize when dry. If subjected to humidity, the oxidation process will continue until it reaches a stabilization point with the moisture in the environment. I anticipate that the oxidation paintings will continue to oxidize during the 6-month course of *Respiration Paintings*, turning greener over time, effectively blooming. I have also made two Copper Monochromes without any urine mixture. This painting will be a constant in the show. No chemical alteration will take place within the copper monochromes—no plant oils evaporating and no urine oxidizing—but the monochrome will appear to change with the changing light, because its reflective surface is highly sensitive.

The Frick greenhouse is divided into two apse-shaped wings; a north wing and a south wing, joined in the middle by a rotunda. There will be 3 seasons to the installation of *Respiration Paintings*: spring, summer and fall. The north wing is designed as a rose garden. The roses will remain throughout the installation, going through cycles of blooming and fading over the six months. In the south wing we have three seasonal floral designs: starting with tulips in the spring, dahlias and begonias in the summer, and chrysanthemums in the fall. The palette of the flowers resonates with the palette in the paintings. In both wings, surrounding the paintings in planting beds there will be mix of herbs and flowering plants including, dianthus, nasturtium,

lantana, rosemary and lavender. The instillation is interspersed with fragrant flowers such as day lilies, sweet pea, phlox, lily of the valley and hyacinth.

I have created pink-scented perfume for the installation. The perfume will infuse the pink wooden architectural stands supporting the paintings, as well as the rosy hued viewing benches created for this exhibition. The essential oils that I have used for both the paintings and the perfume in *Respiration Paintings* are rose otto, geranium rose, rose absolute, geranium, jasmine, ylang ylang, bergamot, red mandarin, yellow mandarin, sweet wild orange, neroli, cardamom, lemon, Peru balsam, benzoin, agarwood, aged patchouli, highland lavender, Himalayan cedar wood and Australian sandalwood. These plant oils were inspired by the primarily pink and yellow colors that I used to make the paintings. Because the perfume is made with 100% pure plant oil, the oils will change with the weather and fluctuations in humidity. Like the oxidation mixture, the plant oils will react to the varying levels of humidity in the air. When it is humid more smells will come out and when the air is dry it is harder to detect them. Like the plants, the fragrance too, will blossom and fade.

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