

FIAT LUX: AN ARTISTIC DIALOGUE ABOUT AGENT ORANGE

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“We must try to expand the boundaries of human wisdom, empathy and perception, and there is no way of doing that except through education.”

Senator J. William Fulbright

It would be fourteen years of bouncing every-which-way between Elizabeth Kubler-Ross' grief stricken stages of denial, anger/resentment, bargaining, depression, and acceptance before the words of Senator Fulbright would confirm what I instinctively knew. I missed my late husband, professor of Theater and Music. He had a grave cancer prognosis when we met. It didn't matter. We were in love. Throughout our twelve-year marriage we chose to transcend his illness by transforming ourselves through art, finding beauty in each new day, and we both shared what was learned from living in the physical, emotional, and spiritual suffering it wrought. We found humor in the most obscure places. After all, we are all going to die. We had God and eternal life, so why should we worry about our temporary physical being? He believed his life would continue through the images he painted, his guitar students, published music, his KRASU invention that stabilizes the guitar, and me.

My husband knew in his heart it was Agent Orange that was killing him from his 1965 tour of duty in Viet Nam, but there was nothing to confirm it. He received nothing from the Agent Orange class action lawsuit in 1984. His illness wasn't deemed epidemiologically associated as one of the illnesses connected to Agent Orange. Most disturbing to me is that he died before our government admitted guilt for his exposure. The Veterans Administration took a year to determine whether the secondary cancer that caused his death, adenocarcinoma of the lung, was related to it. It was. They compensated me when it should have been him. Along with the monthly dependent indemnity compensation (DIC) the Montgomery Bill granted an educational stipend. I was 42-years old, childless, heavily indebted, and widowed from a war that had ended decades earlier. I wanted answers.

No one can warn you about death's evils. Even if they tried we wouldn't listen. Death blackens your soul. The immediate pain of it is shockingly intense no matter how long you've known the person is going to die. Then it happens. For the first year you walk around hemorrhaging from a gaping hole in your heart. You are devastated from that intrinsic final battle to survive. We all experience death from our own perspective. After a loss you'll find yourself immersed in memories. They are your saving grace. You'll begin to communicate with their spirit. They'll communicate back. For a moment we are happy. We are touched. Sometimes their being is embodied in an old valentine that drops from its marked passage inside a book you've decided to pick up and begin reading again. These are the kind of memories and experiences that trigger those five-stages of grief all over again and you roll as the waves of emotion crash over you, pulling you back under, taking you back out to the sea of inner turmoil. I have surrendered to the fact these emotions will be with me until the day I die. It is a lifelong process.

I had to find out what physically happened to me, to us, to our allies. I went back to school to find answers to the many questions that plagued me. I found some answers in every single course I took, however I couldn't find direct answers concerning Agent Orange in any college course. Even my Environmental History professor omitted the use of Agent Orange from

her lecture when discussing Dow Chemical Corporation's poisoning of American citizens here in the states. Why had American history denied the longest and largest act of chemical warfare known to mankind and our environment? Millions had died. Millions more were still suffering. Didn't we care about our freedom fighters, our loved ones, and our environment?

Filmmakers in Hollywood even neglected to inform us. There was no mention of the 21 million gallons of TCDD dioxin contaminated herbicides sprayed over Viet Nam in any mainstream popular film produced like *The Deer Hunter*, *Apocalypse Now*, *Platoon*, or *Forest Gump* to name a few. In 2003 when chronic lymphocytic leukemia (CLL) and Type II diabetes were being service-connected to Viet Nam veterans, HBO debut their latest film, *Path to War*. President Lyndon B. Johnson's inside story never mentioned Agent Orange or the scientific outcry from Nobel Laureates to stop its use in the portrayed dialogue between the president and his staff members. I thought of veterans and their children who could have benefited from an early diagnosis of illnesses if they had been warned to have annual physicals. My husband may have had a stage-one chance for survival instead of stage-four. Most veterans don't even know if their illness is related to Agent Orange. Veterans' children don't have a clue about what their mom or dad may have been exposed to by the military and has been genetically passed onto them. It is time they were educated for their children's sake. The poisoning is not going to end anytime soon unless we acknowledge it, embrace it, and work overtime to resolve the issues poor judgment has made.

For over 30 years Viet Nam veterans have sought compensation for illnesses they believe were caused by their wartime exposure to contaminated herbicides. U.S. soldiers and airmen who prepared, handled or sprayed the herbicides were routinely denied compensation by the federal Department of Veterans Affairs (VA) because the VA had taken the position that there was not enough scientific evidence linking herbicide exposure to specific diseases. The VA reviewed studies that came from people who were exposed as a result of their jobs or from industrial accidents. These exposures were often at high levels and for long periods of time. Levels of exposure in Viet Nam veterans were extremely wide ranging. The VA's argument was that they simply did not know the degree of risk for Vietnam veterans. Animal studies provided valid evidence for those trying to understand human cancers in relation to chemical exposures, but the VA reviewed only human studies to evaluate herbicide effects.

My husband's pure seminoma (testicular cancer) did not fall into one of those VA disease risk categories. They would determine there would not be sufficient evidence for his cancer to be caused from dioxin exposure. Examination prior to my husband's surgery found no sign of tumor growth in his testis where the disease would normally begin. He was 44-years old and his age defied what was common among victims. There were no markers in his blood to identify what exactly was appearing on the X-ray films and CT scans. Doctors were baffled after surgery when pathology revealed his abdominal stage-four tumor was pure seminoma. It was like a large water balloon. Upon resection it exploded releasing cells throughout his abdomen. This exacerbated his case. Normal treatment procedure would have been radiation therapy to shrink the tumor before surgery, then a regiment of chemotherapy afterwards. Pure seminoma has over a 90% cure rate. Lance Armstrong is living proof. He was not exposed to contaminated herbicides.

As my husband's illness progressed it became evident there would not be a child conceived between us. From time to time these issues would surface; mostly by family members who felt alternative methods could be used for conception. We sought professional help and decided to consider genetic counseling. We paid money to receive sperm donor background and

genetic trait profiles. We reviewed the three to make the selection. I liked one, my husband and mother liked the other. It was left up to me to make the selection. The one thing that stood in the way of the final decision was that the child would not be able to know their father. I decided on the way to be artificially inseminated I couldn't go through with it. It wasn't fair. We decided to take out our nurturing instincts on our cat, Sassy Kraus, the real anthropomorphic fallacy.

Collectively these issues compelled me to create an art exhibit that would bear witness of those who are suffering and commemorate those we've lost through the use of TCDD dioxin contaminated herbicides in Viet Nam. Through college coursework I was introduced to Pop artists who inspired me to utilize their artistic techniques from the 1960's as a lens to look at contemporary veteran illnesses and visually discuss American history that have been abated for over 30-years. I drew upon these artists' same social facets of artistic expression to expose the temporality of human experience. I set out to create a timeline of my own that uses propaganda against the war to discuss military loyalty, religion, and philosophy narrating you into the 21st century. Once these works were completed they were installed into vignettes that revealed a soldier's inner struggle of doing right by his country even though his religious and philosophical upbringing were the complete opposites of what he had been groomed to believe in. The project grew to enormous proportions from embracing American Pop culture in ways that subjected art to science, medicine, history, sociology, religion, philosophy, and ethics. It is a story from birth to death.

Fiat Lux (Let there be light): An Artistic Dialogue about Agent Orange
The Exhibit

Homecoming, installation sculpture and mixed media

The events artist Alan Kaprow created were non-verbal theatrical productions that involved the spectator as well as the performer. His movement of embracing nonsensical language and poetry through art making broke down the boundaries between the arts during a period of time in history that demanded a celebration from an alternative society. Kaprow's artistic expression posed a question about artists restricting themselves to canvas. He felt that an artist is a composer with routines and habits and wanted to create events in settings new to art. Merging these ideas, Kaprow composed with police files, old socks, a dog, trash, and tires stating that anything aesthetically disciplined metaphorically is art. Exposed to Kaprow's ideas, I thought about the discards of life.

After the loss of my husband I had sifted through our home trying to decide what to toss out and what to keep. I remembered a box in the backroom closet that my mother in law had sent us. It was laden with Viet Nam memorabilia. One letter in particular set my mind on fire. My husband wrote that he was coming home on Christmas day. He was so excited and joked about the fact that he'd be arriving before he left, referring to his crossing of the International dateline. For the next three hours time stood still as I sat there in the middle of the floor scattering his letters and photographs around me, flipping each one over I traced each loop, each dot of each word that he had written to describe his experience. In these passages I looked for evidence of his knowledge of the spraying around his evacuation unit's perimeter and thought about trees.

Trees are one of the most significant symbols known to mankind. The family tree is used to represent our genealogy. Trees sustain life through the fruits they bear and are home to animals, birds, and insects. Legend has it that the triangular shape of the fir tree was used to describe the Holy Trinity of God, the Father, and the Holy Ghost as early as the 7th century. To Christians the tree also shares reference to Christ's death. He died on the tree when they nailed Him to the wooden cross. I continued to mull over the tree's significance to the Christmas season and what it represented into the next.

One week after Christmas New Years day is celebrated. While that day marks the Christian New Year, in Viet Nam they celebrate a different day. Their new year is a movable feast beginning with the first new moon in January called Tet. The Tet tree, called cay neu, is a bamboo pole stripped of everything but its tuft on top. It is used to ward off evil spirits. These ideas progressed from one to another as I continued to formulate the installation of *Homecoming* in my mind's eye. I wanted to speak to these two traditions to tell Viet Nam's toxic environmental story.

Seventy trees were defoliated and spray painted to create a tree lot found on American neighborhood corners throughout the Christmas season. The fragrance of pine permeates the installation triggering remembrances of holidays past. *Homecoming* would also represent what Viet Nam's mangroves and forests looked like after herbicide exposure. The French pulled America into the war, so I thought it appropriate to use the French curve to design Plexiglas frames enabling the viewer to engage with letters and images my husband had sent home. The curve also represents the horn of the water buffalo used throughout Viet Nam's agriculture. Red lanterns are a common sight during Tet. Mixing them with Christmas lights on a bow enabled me to suspend the documents for viewing and create a perimeter of before and after exposure. Red represents happiness and spiritual power. Catholic priests wear red vestments to celebrate the Eucharist during high holy days. Red is the color of blood.

Incensed by what President Kennedy had done through the use of contaminated herbicides in warfare, I decided to use ideas that merged Catholic ideology with the massive birth defects and spontaneous abortions being reported throughout South Viet Nam. A commercial plastic nativity of Joseph, Mary, and the baby Jesus are illuminated, serving as a reminder that Catholics are confirmed in their ideology to emulate the Holy family through word and deed. The church upholds its articles of religion regarding family and reproduction and does not allow for abortion. Ceramic Milky storks were sculpted as dead or dying to reference their legend of delivering the newborn infant. The importance of the installation is to move the spectator from thinking herbicides killed only trees. America had destroyed the very foundation of its religious beliefs by exposing humanity and the environment to contaminated herbicides. Would Jesus do this?

Two Peter Gunns, acrylic on wood panel diptych

Andy Warhol's art making addressed issues of capitalism, celebrity, and current events. He documents American history through art in ways that distort the media's standard use of imagery. Using the public's fascination with a world graphically filled with violence and celebrity, he includes the poor and ordinary people who were subjected to death. Warhol was

enigmatic about the meaning of his art. He provoked you to ask; where's the conviction, the compassion and the condemnation?

Television's imagery of Viet Nam aired nightly in the news, projecting the mechanistic use of young men at war while at the same time reporting their numbers killed in action. The draft terrified young men. I remembered my husband nervously laughing at two images of him taken in front of the 85th Evacuation unit during his tour of duty. He related how these photographs revealed how his hand was glued to his gun. He said he slept with his gun, he ate with his gun, and if he could, he'd have even showered with his gun when there was a shower available.

My husband didn't see combat in the fields, but he smelled the blood of his evacuated buddies as they arrived from battle with missing limbs, gunshots, and embedded shrapnel wounds. Post traumatic stress disorder affected military personnel as they were moved from the peaceful United States into the horrors of war. Their exposure to contaminated herbicides exacerbated the effects of the adrenalin that surged through their sympathetic nervous system.

21 Million Gallons, video installation

One of Warhol's mechanical painting processes created a numbingly repetitive grid that produced the phenomenon of societal image inundation. The grid is not found in nature. It is a product of our culture. Warhol used the grid in his work to suggest strips of film or grocery store merchandising. Caught up in the commercial mechanistic process of producing the frightened or manipulated, tragic or exploitative photographic imagery into paintings, he stated he wanted to be a machine and named his art studio the Factory.

Incorporated into the size, scale, and elementary techniques used in Warhol's paintings were the memories of psychedelic oil lamp light shows that accompanied rock concerts during the 1960's. These ideas moved me to present evidence of contaminated herbicides sprayed over Viet Nam by editing and coloring film clips from Barbara Sonnenborn's documentary, *Regret to Inform*. The imagery was colored by referencing the use of the other Agents White, Pink, Purple, and Blue. The clips were looped to present repetitious visual imagery that mocked the commodity of chemicals, but testified to the continued assaults on Viet Nam's environment exposing our soldiers, allies, and the innocent victims we were fighting to protect.

Dying to Live, sculpture and mixed media

The Department of Defense set parameters for The Wall in Washington, DC to inscribe the names of those killed in action during the Viet Nam War. It left off those lost to Agent Orange cancers and suicide from severe post traumatic stress disorder (PTSD). Victim empathy moved me forward in formulating a sculptural piece. Edward Kienholz lent me his sculptural technique of casting the human body into form by using assemblages from the discards of life contained in photographs, pieces of clothing, and scavenged objects found in our home. Medicine and its records gave witness to the truth about the cost of human suffering.

I wanted to compose a scene choosing a musical and theatrical setting in honor of my husband's education, performance, and teaching career. It is a composition of a soldier following the propaganda of life's orders from birth to death. A guitar, the heart, soul, and most popular image of the 1960's, is used as the torso of the sculptured body, fusing the former officer's

lifestyle with the civilian classical guitarist. Since the French enlisted United States' support for their war in Vietnam, I selected the masterwork, *Faure Requiem*, to resonate continuously from within the stage. It is considered to be one of the purest pieces concerning a mass for the dead. Both music and text emphasize elements of faith and hope in the Christian philosophy of life rather than the fears and terrors of judgment. It is in this elevated spirit that homage to our soldiers whose lives were destroyed by the ravages of this war should be honored.

Questions are posed through the use of objects and symbolism: a dead Christmas tree and the folded American flag, IV bags and tubes, medical bills, the broken guitar, snakes, photographs, published music, medicine and vitamin bottles, army decorations, concert posters, educational degrees, teaching credentials, letters of recommendation, wood, a wallet, a car key, and bolts. They are part of what makes up the artistic human figure, an image that represents what America does not want to see, and universalized in a soldier who is sick and dying from Agent Orange, but still following orders. A supine body on an army cot salutes his folded American flag. The war has ended but he is forced to say, "Yes Sir," to radiation, "Yes Sir," to chemotherapy, "Yes Sir," to the medical bills, and "Yes Sir," to the pain and suffering. He has asked for none of it. He receives only denial from his government.

The other hand clutches medical breathing apparatus. A hat stand behind the cot holds an army cap, a gas mask, and multiple IV bags with tubes running into the left arm closest to his heart. The folded flag's staff is a dead Christmas tree with all the branches cut off and bolted to the stage floor symbolizing all the men and their possible children who have ceased to exist due to their chemical exposure. The bolts symbolize the fact that men had no choice. Most went whether or not they wanted to. In my late husband's case he was groomed through ROTC in High School and as an army officer in college graduating with a Masters as second lieutenant.

The stage made of Mahogany is painted black and has the constellation of Taurus drilled into the top. Light from inside pierces the constellation. The stage's architectural composition mocks The Wall. It is covered with hospital and medical bills wallpapered in chronological order. The back of the wall is a pictorial time line from birth to death using techniques in collage on paper with photographs. It testifies that this soldier entered heaven through the corridor of loyalty.

Life Investment, mixed media sculpture

To discuss the continuing effects of Agent Orange and the value placed on human life, I used techniques from the Minimalist movement that followed Pop art. The founders and leading Minimalists were poetic in their dealings with timelessness, discussing issues of indefinite duration through their sculpture and earthworks. Drawing from this idea, the sculptural work *Life Investment* presents 107 feet of cancelled checks to doctors and pharmaceutical companies placed end-to-end. The sculpture creates awareness to Agent Orange by projecting future health issues onto the next ten generations of people who have been exposed. Repetition, commercialism, and capitalism represent the commodities of life through documented insurance payments to surgeries and mental healthcare physicians, creating a personal timeline from cancelled checks. The monetary drain is intertwined with the day to day living experienced by the sick.

On the Moon, oil on canvas

Warhol's fascination with the news media led me to seek ways to visually discuss the ethical choices our government was making during a time of national chaos. While touring the Air and Space museum in Washington, DC I found a copy of the front page cover of the Wisconsin State Journal morning edition newspaper from Monday, July 21, 1969. It announced that at 9:56 p.m. CDT America had landed men on the Moon. These space missions would unify our nation while at the same time divide us over the thousands who were dying in Viet Nam. The space program's success permeated American culture through Pop music and art.

From the Earth to the Moon and Back, installation and mixed media sculpture

As a young man my husband had saved the black and white glossy photographs of astronauts his sister had sent him from Texas. He was proud of America's space achievements and was always joking about wanting to go to the moon so he could play guitar in a weightless environment. Astronaut images, X-rays that revealed his disease, and the race to space against Russia throughout the 1960's moved me to create and integrate sculpture that would cause the viewer to reflect on ethical issues surrounding choice.

I wanted to artistically juxtapose the 20 billion taxpayer dollars spent for these space missions with the governmental choice not to fund proper research regarding the mutagenicity of TCDD-dioxin. Mature rhesus monkeys, a primate considered our nearest biological relative and superior models for handling diseases, kept dying when exposed and scientists were claiming they were too expensive to replace. Thought provokingly, I posted excerpts in text of the live television broadcast from the first lunar orbit of Commander Borman, Pilots Lovell and Anders taking turns reading from the book of Genesis. I used quotes from Jean Paul Sartre's *Existentialism is Humanism* highlighting, "To do nothing is to do something. To accept status quo is to tolerate. To tolerate is to condone." I would also quote Sartre to say, "In fashioning myself I fashion man." These events and philosophy would weave the exhibit's works together and give additional weight to the religious structure affecting subliminal self examination.

In retrospect I felt our government had said, "Hey, look over here while we do this over there." I created a kinetic sculpture of the earth and moon to visually speak about Agent Orange issues. Following the cancer and birth defect trail from the use of contaminated herbicides sprayed over Viet Nam, I realized through research that our entire globe had been contaminated. It affected not only the United States, but our allies from France, Britain, Canada, Australia, New Zealand, Thailand, South Korea, and people in Laos and Cambodia. It was being used throughout our agriculture globally.

Two lampshade skeletons painted orange suspend a globe of the earth, allowing the moon to rotate around it. The globe of the moon is in equal size to the earth to represent an out of balance budget. It metaphorically states that we are caged in. It speaks to the power of the chemical corporations. They would be licensed to kill for monetary gain. The effects of Agent Orange would be scientifically buried as classified information for a decade until the dead would resurrect its toxicity through the mournful cries of humanity.

Until the Passing of the Sun, Moon, and Stars, mixed media sculpture

In my internet search for images of effected children I came upon two Vietnamese infants. These thumbnail JPEGs bore witness to the devastating effects of Agent Orange. Society has been kept in the dark regarding such terrible birth defects. I wanted to soften the harshness of the imagery and bring light to the darkness these children experience from their illnesses. I wanted to elicit a response from the public to help them physically, emotionally, and monetarily. Upon viewing the piece my mother's response was, "Why don't they surgically remove that head from her foot so she can lead a normal life? I had asked the same question.

Faux Paw, sculpture and mixed media

Shortly after my husband's retroperitoneal lymph-node resection in 1988, he transcended his hard recovery by writing a suite of solo guitar pieces in honor of the Sequoia National Forest, the world's largest living things. He used the musical sonorities of his favorite French composer, Erik Satie, and the multidimensional simultaneity of Sequoia's aural stimuli to compose them. They were completed shortly before the centennial celebration of the park in 1990. During his concert debut at the celebration he dedicated the suite to all the people who worked to conserve the Sequoia tree's environment. He also dedicated each composition to friends, family, and the doctors that saved his life.

Sharing his joy with the Satie Foundation in Paris, France he sent them a copy of his published work. In the cover letter he told Joseph Laffosse-Satie, Erik Satie's grand nephew that he had given birth to this creation of music. My husband's French was substandard and Joseph interpreted it that we had had a child. A few weeks later we received a package containing a beautiful red merino wool baby creeper. To neutralize the embarrassment from this misinterpretation, I grabbed our cat and secretly dressed him up in it and presented our "son" to my husband. He almost busted a gut laughing. This intense memory would give me reason to use Marisol's sculptural techniques to memorialize this event.

Living Without, ceramics and mixed media

I employed Claus Oldenburg's artistic techniques to create a pathology lab using ceramics and mixed media. A repetitive image of the dioxin molecule was fired onto handmade tiles using decals to create the foundation for this work. X-rays document the seriousness of my husband's case history and I used one to frame the malignant lung, testicle, ribs, and tumor on top of the surgical tray. I wanted to discuss the commodity of illness, infusing the viewer with visceral internal body parts to illustrate how humanity is being forced to give up necessary organs due to malignancies from exposure to Agent Orange. The cabinet, an old trash receptacle found in a second-hand store, is turned into an illuminated coffin.

PTSD, DSMIII, and Solidarity, oil on canvas and mixed media

Post traumatic stress disorder is prevalent throughout the global Viet Nam veteran community. I wanted to visually discuss combat issues by developing a painting that integrated works of color theory and Pop art, with the plight veterans experienced when seeking help for

their mental health problems. Dr. Max Luscher's 1969 book, *The Luscher Color Test*, used color theories of functional psychology to reveal personality. Through the grouping and positioning of his eight manufactured colors anxieties, compensations, and conflicts are revealed in the individual.

Mixing Luscher's eight colors in oil, I used his theory to pair the colors into groups of two. I then layered in Robert Rauschenberg's creative concepts of using photographic imagery to the painting. The paired colors were then painted around historical photographs to illuminate veterans' experience. Rauschenberg also added objects to the canvases he painted to give them a three dimensional quality.

Reflecting on a chapter from Gerald Nicosia's book, *Home to War: A History of the Vietnam Veterans Movement*, I wanted to tell his story of veterans who returned home with severe post traumatic stress disorder. I also wanted to memorialize the healthcare professionals who worked so diligently in aiding veterans who were suffering from this trauma. The Pentagon and VA would spend years denying veterans the existence of their illness. Nicosia would document:

"If Vietnam vets were seen at all, it was usually to provide them with the "quick cure" a bag full of pills. Whether a vet was depressed, suicidal, chronically drunk, beating his wife, suffering from severe headaches, insomnia, nightmares, night sweats, and attacks of paranoia, or simply unable to hold down a job or to care about the physical circumstances of his life, he was handed a junkie's fortune in tranquilizers, with plenty of renewals."

Disneyland in Anaheim would historically mark the place where VA doctors and mental healthcare personnel would meet to argue the reinstatement of PTSD into the third edition of the *Diagnostic and Statistical Manual of Mental Disorders*. This would enable doctors to begin treating affected veterans. I added plush sculpture of Goofey flying on Dumbo. They would reference how veterans felt while taking their prescriptions and beckon the viewer back to the nursery. The experiment worked. My mentor hated it.

For Future Protection, photographs and mixed media

My grandfather, father and every uncle were veterans of WWII. My brother retired from the Air Force in 1996. His daughter paid a brief visit with the Navy and later opted out. My husband died as a result of his exposure to contaminated herbicides in Viet Nam. We were not the only military family. There are many others.

Behind closed door sessions regarding the reinstatement of the draft, our current administration is being briefed by the "what ifs" the United States would encounter in the war against terror. When the war in Iraq began in 2003 I could not help but think of those families who are being exposed to toxins and the wrath of war. Looking over the history of lies that began these preemptive strikes on other countries I asked myself, who will safeguard America? Will our government? Will our politicians? The mirror in this installation is used to suggest it is up to us to protect our future generations who may be called to fight an unjust war and insure their safety against weapons of mass destruction.

Heaven on Earth, video installation and photographs

Certain inventions of our century have given us new ways of experiencing art. To preserve the memory of my husband's dedication to classical guitar, existential clips from guitar performances and teaching videos are presented through visual and auditory methods. This intimate setting uses earphones and the TV, allowing the viewer to engage with his music and life.

Anonymous, ceramics and mixed media

The inspiration for *Anonymous* came after working with ceramicist Richard Shaw who used casting methods to obtain tromp l'oeil (to trick the eye) effects in his work, mixing curiosity with reality. Using his ideas I decided to cast the human body to discuss the effects of Agent Orange. The government has not kept records regarding its dead and dying military personnel, nor have they warned civilians of its toxic effects. They have tested it throughout the world with complete disregard of its effects or bearing any responsibility for the disaster these contaminated herbicides have created. Thirty years later people are still fighting for their lives in hospitals, nursing homes, and hospice awaiting science and medicine to come to a conclusion on how TCDD dioxin exposure is affecting their bodies. The government still states the evidence is not clear.

As humanity is forced to pay into dying to live through slash and burn procedures of surgery, radiation, and chemotherapy, victims' lives continue to be disrupted by illness and malignancy. Instead of taking annual time off for a family vacation enabling them to relax and enjoy their lives, they wait in surgeon, psychiatrist, and psychosocial counselors' offices to hear their prognosis, or be prescribed medications that will dampen their depression. They spend vacation and retirement funds undergoing expensive treatments to prolong their lives. Maybe they'll get to see their child graduate High School, their daughter marry, or their grandchild born. Maybe they'll be meeting with their lawyer to discuss a divorce brought about by having to relate to their spouse through the stress of dealing with the day to day fear of illness or death. The instinct to overcome their disease will compel them to pray for another day, month, or year without additional indebtedness, physical pain, or mental and spiritual anguish.

Bed, intaglio print over blind collagraph

The effects of TCDD dioxin on humans became a quest for knowledge through current research, compelling me to create an artistic piece that incorporates how it disrupts the endocrine system. I would entitle it *Bed*, for we all, collectively, are lying in it. The war in Viet Nam has ended, but the continued assault on our global citizens and environment has not. I am haunted by the fact that civilians, veterans, and their families are sick and dying. They suffer from the consequences of contaminated herbicides without any federal financial assistance because their illnesses do not meet certain epidemiological criteria. They pass unnoticed while our governments drag their feet regarding research that scientifically explains what is truly going on.

The body is an enclosed system. Whatever enters it will be processed throughout its entirety. How can scientific research look at one part of this system and say there's evidence while denying there's a connection to other parts of the same system? Literally and figuratively I cut the body into pieces to protest the way scientific research would ignore specific diseases, denying any connection of the effects of TCDD dioxin from one organ to another. It is now

scientifically acknowledged that 2,3,7,8 - tetrachlorodibenzo-*p*-dioxin (TCDD) is an endocrine disruptor that exerts a variety of adverse effects in animals and humans causing teratogenesis, immunosuppression, and tumor promotion mediated by the aryl hydrocarbon receptor (AhR).

It is known that TCDD dioxin is absorbed into fatty tissues. The brain is composed of fat, yet science has not researched its effects on it. For instance, the pituitary, sometimes called the “master” gland, controls the functions of other endocrine glands. The pituitary’s anterior, intermediate, and posterior lobes help to regulate certain hormonal functions. What does the pituitary gland do when exposed to dioxin? Does the dioxin molecule just bind to the Ah receptor and destroy its affected organs over time?

After researching the most basic information on the endocrine system for this project, it would be logical for one to conclude that *ALL* endocrine related illnesses are connected. The *Partial List of Hormone-Releasing Glands* (Fig.1) taken from the sixth edition of *Biological Psychology* by James Kalat identify the bodily functions of the endocrine system. Via a small initial signal from the pituitary, its chemical communication system provides the means to control a huge number of physiological processes. Target cells for most of these hormones produced in tissues are themselves endocrine cells. The balance in the production of these hormones dictates our well-being.

Current research reveals that depending on the cell type examined, TCDD can affect cell proliferation, apoptosis, and differentiation. Its effects can also be contradictory. This xenoestrogen and antiestrogenic pollutant may affect pituitary gland function through the synthesis and secretion of growth hormone (GH) and prolactin (PRL). Limited information exists on how TCDD may affect pituitary gland function and it is imperative to fund further research.

The National Academy of Science Institute of Medicine’s 2002 *Table 1: Strength of Association of Diseases and Herbicide Exposure* (Fig. 2) lists illnesses reported by civilians, veterans, and their families. Diseases directly related to the endocrine system are shown to have inadequate/insufficient evidence to presume there’s strength of association to TCDD dioxin exposure. Why is this? If TCDD dioxin has been proven to be an endocrine disruptor, what evidence is present to determine them as having inadequate and insufficient evidence?

Specific hormones that control important functions of the body are secreted by the anterior lobe of the pituitary. The examination of these hormones reveals interesting connections between their functions and diseases considered to have inadequate /insufficient/no evidence to be herbicide related. I am not a medical physician, biological psychologist, or chemist. I am an artist who seeks to find the long overdue answers to a problem that seems to be escalating cancer statistics in our society. I believe there is sufficient evidence for scientific research to study the toxic effects of TCDD dioxin on the pituitary. I would also presume a connection is mediated through the pituitary’s control over the whole endocrine system. Empirical observation of endocrine related illnesses in light of current research would suggest that Viet Nam veterans who are suffering or deceased from illnesses listed by NAS IOM as having “inadequate/insufficient/suggestive evidence of no association” should be reconsidered for service-connection.

While we manipulate the genetics of our food producing plants to resist the contaminated herbicides we spray and recycle slaughterhouse trimmings from dioxin exposed livestock back into animal feed to avoid emissions through incineration, I question what we are doing to ourselves and future generations. Time is running out. Viet Nam and its veterans are our future. Our government must correct the pattern of denial regarding TCDD-dioxin poisoning. They

must protect all future generations from contaminated herbicides. They must learn to treat all peoples with respect and compassion. They must value humanity.

(Fig: 1) *Partial List of Hormone-Releasing Glands*

Organ	Hormone	Function to Increase or Decrease Production
Hypothalamus	Various releasing hormones	Promote or inhibit release of hormones by pituitary.
Anterior pituitary	Thyroid-stimulating hormone (TSH)	Stimulates thyroid gland.
	Luteinizing hormone (LH)	Progesterone / testosterone and ovulation.
	Follicle-stimulating hormone (FSH)	Estrogen / maturation of ovum / sperm production.
	ACTH	Secretion of Steroid hormones by adrenal gland.
	Prolactin	Increases milk production.
	B-endorphin	Reduces pain.
Intermediate	melanocyte	stimulating hormone - to control skin pigmentation
Posterior pituitary	Oxytocin	Controls uterine contractions, milk release.
	Vasopressin	Constricts blood vessels and raises blood pressure.
Pineal	Melatonin	Increases sleepiness; also has role in puberty onset.
Thyroid	Thyroxine	Increases metabolic rate, growth, and maturation.
	Triiodothyronine	
Parathyroid	Parathyroid hormone	Increases blood calcium and decreases potassium.
Adrenal cortex	Aldosterone	Reduces secretion of salts by the kidneys.
	Cortisol, corticosterone	Elevates blood sugar, metabolizes proteins in liver.
Adrenal medulla	Epinephrine, norepinephrine	Similar to effects of sympathetic nervous system.
Pancreas	Insulin	Entry of glucose to cells / increases storage as fats.
	Glucagon	Increases conversion of stored fats to blood glucose.
Ovary	Estrogens	Promote female sexual characteristics.
	Progesterone	Maintains pregnancy.
Testis	Androgens	Promotes sperm production /male characteristics.
Liver	Somatomedins	Stimulates growth.
Kidney	Renin	Converts a blood protein into angiotensin.
Thymus	Thymosin (and others)	Support immune responses.

(Fig: 2) *Table 1: Strength of Association of Diseases and Herbicide Exposure*

Hierarchy by Strength of Association	Disease
Sufficient Evidence	Chronic lymphocytic leukemia (CLL) Soft tissue sarcoma Non-Hodgkin's lymphoma Hodgkin's disease Cloracne
Limited /Suggestive Evidence	Respiratory cancers (lung, larynx, trachea) Prostate cancer Multiple Myeloma Acute and subacute transient peripheral neuropathy Porphyria cutanea tarda Type II diabetes Spina bifida (in offspring)
Inadequate/Insufficient Evidence	Hepatobiliary cancers Nasal/nasopharyngeal cancer Bone cancer Breast cancer Cancers of female reproductive tract Renal cancer Bladder cancer Testicular cancer Leukemia including acute myeloid leukemia (in offspring) Skin cancers Spontaneous abortions Birth defects (other than Spina bifida) Neonatal/infant death and stillbirths Low birth weight Childhood cancer in offspring including AML Abnormal sperm parameters and infertility Cognitive and neuropsychiatric disorders Immune system disorders Circulatory disorders Respiratory disorders AL-type primary amyloidosis
Limited/Suggestive Evidence of NO association	Cancer of the gastrointestinal tract (colon, rectal, stomach and pancreatic tumors) Brain tumors