

*Empirical Discourse, Volume 1: Holograms, Etc. (Second Edition)* was produced by Nicole Mauser in conjunction with the exhibition, *Interference*, organized by Alex Schaufele, Art Coordinator at Crossroads Gallery and Assistant to the Directors at Snite Museum.

April 12 - June 30, 2018

Notre Dame Center for Art & Culture

1045 W. Washington Street South Bend, IN 46601

[artsandculture.nd.edu/crossroads-gallery/](http://artsandculture.nd.edu/crossroads-gallery/)

This second edition includes an exhibition essay and image contributions by Zsofia Valyi-Nagy. Valyi-Nagy is a PhD student in Art History at the University of Chicago. Her research focuses on postwar artists, particularly women, who experimented with emerging technologies such as mainframe computing and holography. Zsofi is also a practicing artist and holographer.

"Empirical Discourse" was originally proposed in the course, *Artist Publications*, taught by Anthony Elms at The University of Chicago circa 2009.

Many thanks to many friends and colleagues for your enduring support, conversations, and studio visits: Matt Brown, Tobey Albright, Claire Michelsen, Ryan Peter Miller, Zoe Nelson, Katy Kirbach, Paola Cabal, Karen Azarnia, David Cordero, Steven Wang, Billie Howard, Mirjam Wendt, Jonah Criswell, Lee Piechocki, Corey Antis, Robert Bingaman, Molly Bingaman, Kelly John Clark, Kate Perryman, Jessica Baran, Garry Noland, Rhonda Wheatley, Edra Soto, Jen Tremblay, Maggie Taft, Anna Kunz, Matthew Metzger, Teresa Silva, Taekyung Suh, Celine Fournier, Siyuan Zhao, Jill Lerner, Alex Schaufele, Lucas Korte, Eric & Becky Mauser, Chicago Department of Cultural Affairs & Special Events, High Concept Labs and too many more to name!!!

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Edition \_\_\_\_\_ / 100



# EMPIRICAL DISCOURSE VOL. 1

"HOLOGRAMS,  
ETC."



NICOLE MAUSER | INTERFERENCE  
NOTRE DAME CENTER FOR ART & CULTURE

Nicole Mauser paints the seemingly unpaintable--that color you can't quite remember, the reflective surface of a skyscraper, or the elusive rainbow that bounced around the room for five minutes this morning. Like her subject matter, the colors of her paintings, collages, and videos can't be pinned down. Interference pigment, made from metal oxide coated mica flakes, is used in some of Mauser's small paintings. These colors appear transparent when viewed straight on, but reflect light and shift hue when viewed from different angles. As the viewer moves, violet turns to a greenish gray.

This is not unlike the experience of viewing a hologram, which, from certain angles, appears to be a blank, flat surface--a piece of film, glass, or mylar. When viewed under the proper lighting conditions, however, three-dimensional objects "appear" just behind the surface, and if we move around we can their depth and parallax, as if we were looking at the original objects that were holographed. Viewing a hologram thus requires movement. If it's small enough to hold in your hand, like the embossed hologram of a flying dove on your credit card, you might tilt the plastic back and forth to watch the image move through the full rainbow spectrum. If it's hung on a wall, you might instead shift the weight of your body from left to right, up and down, back and forth in order to perceive the depth and parallax of the image--a sort of dance that holographer Rudie Berkhout called the "12-milliwatt boogie." In the case of so-called rainbow holograms, which may be viewed in ordinary white light (as opposed to monochrome laser light), the colors also shift depending on the angle from which the object is viewed. These recordings of objects are made possible by the physical principle of interference. Holography and Mauser's paintings thus share both a verbal and visual vocabulary.

In order to understand the principle of interference, imagine standing over a pool and dropping two pebbles into the water at the same time, letting them hit the surface in perfect sync. Each pebble creates a circular wave that radiates outward.

As the two waves cross paths, they overlap but do not disrupt one another, since they are moving at the same frequency. When two waves of equal amplitude and frequency repeatedly hit the surface, they create an interference pattern. The same principle applies when two coherent beams of laser light meet on the surface of a holographic plate or film. When a hologram is viewed under a microscope, this pattern appears as bands of light and dark.

Mauser collects holograms, or rather what Peter Zec in 1989 termed "holokitsch"--holographic trading cards, iridescent sneakers, and other tokens of what she calls "futuristic nostalgia." Mauser is not a holographer, but rather explores what it might mean to think and see holographically. Holding the holokitsch between her fingers, tilting it back and forth, she aims to "translate" what she sees into the language of painting. There is a stubbornness to her loyalty to the medium, this insistence on capturing immaterial images through such material means. But the impossibility of her task renders it a productive one, which in turn allows her to push boundaries between mediums. "One of the beauties of this age," wrote Berkhout in 1979, "is our discovery of the obsolescence of thinking in terms of opposites." The elusive rainbow is emblematic of this displacement of binaries by spectra.

In the summer of 1990, Berkhout and thirty-four other representatives from around the world gathered here at Notre Dame, at Saint Mary's College, for the International Congress on Art and Holography. A group portrait shows him and Margaret Benyon, a pioneer of the medium, too deep in conversation to look up at the camera. Nearly three decades later, this generation of holographers laments that "their" word, hologram, has been "stolen." Mauser is not a culprit. Rather, her work shows us how two or more mediums can interfere in the sense of two pebbles synchronously hitting the water, sending waves radiating endlessly to the water's edge.

-- ZSOFI VALYI-NAGY





Berenice Abbott, *Circular Wave Systems*, c.1960,  
Gelatin silver print on Masonite, 44.2 x 52.5 cm



Rudie Berkhout, *12 mW Boogie*, 1987,  
white-light transmission hologram, one plate of triptych,  
8 x 30 inches.



Rudie Berkhout and Margaret  
Benyon (front row) hanging out at the  
International Congress of Art and  
Holography, Saint Mary's College,  
Notre Dame, Indiana, July 18-22, 1990.

(Images above and right contributed by ZSOFI VALYI-NAGY)

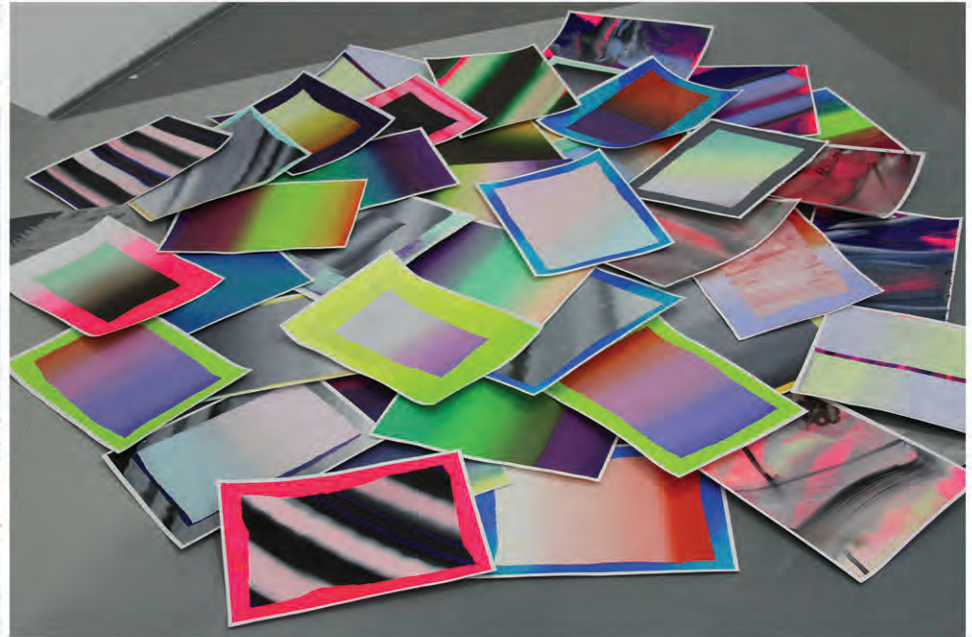


Painting is thinking physically. Before/during/after painting in the studio, I attempt to follow the logic of pictures which demands slowing down, retracing my steps for deeper understanding. Lately, my interests are central to chroma as light which is a form of energy. This zine is a collection of things I'm looking at and remembering while in the studio. It aims to collect fragments of physical thinking to include the objects and ideas that drive process, subject matter and color palette choices.

For years I've been continually drawn to John Clerk Maxwell's first color photograph, *Tartan Ribbon* (1861). The image poses questions: what is its true orientation, does orientation matter?, what is its material specificity as separate glass plates before printing, its use as a projection, the ambiguity of image, what is its subject other than demonstrating a purely scientific process. Maxwell used exposures on separate red, green, and blue (RGB) glass plates. Today holograms are similarly produced using RGB separations. The photograph was taken around the time when painting was not yet dead and early photography was vying to be respected as an art form. All of these factors pose questions about what the potential overlap between abstraction, photography and color fields.

More recently, holograms have been objects of interest. Specifically, the omnipresent cultural spread of holograms: from hand held mass-produced light refracting objects, trading cards and camouflage. Futuristic nostalgia. Holograms permeate weapons technology, fashion and popular culture. Most people have holograms in their back pockets. They are mundane. Imprinted on credit cards, woven into currency, on identification cards, etc. to function as a type of "authenticity." Literally, holograms both reflect and refract or break light. This color is experiential, temporary and fleeting yet vivid and fragile. I am interested to break down and suspend the affect of reflection into color fields for the viewer to occupy.

Art Historian Lisa Zaher pointed out that the artist Hollis Frampton made a 3-minute video piece called *Maxwell's Demon* (1968). The film is based on Maxwell's thought experiment around 1871 which suggests how gas molecules may hypothetically violate or break the second law of thermodynamics. Hollis' film features full screen primary colors stitched together by a male figure demonstrating a series of basic calisthenic-like movements. There is something about its elements that relates to the spectral color of holograms.



Nicole Mauser, Detail: *Color Memory*, 2018, Oil on gessoed paper installed on vinyl floor painting, 7 ft x 7 ft (floor) Forty paintings 11 x 15 in (paper).





Nicole Mauser, *Color Memory*, 2018, Oil on gessoed paper installed on vinyl floor painting, 7 ft x 7 ft (floor) Forty paintings 11 x 15 in (paper). Installation at Chicago Artists Coalition as part of *Superficial Paradise HATCH* exhibition, March 2-22, 2018.



Holography is based on the principle of interference. A hologram captures the interference pattern between two or more beams of coherent light (i.e. laser light). One beam is shone directly on the recording medium and acts as a reference to the light scattered from the illuminated scene.

You make a hologram by reflecting a laser beam off the object you want to capture. In fact, you split the laser beam into two separate halves by shining it through a half-mirror (a piece of glass coated with a thin layer of silver so half the laser light is reflected and half passes through—sometimes called a semi-silvered mirror). One half of the beam bounces off a mirror, hits the object, and reflects onto the photographic plate inside which the hologram will be created. This is called the object beam. The other half of the beam bounces off another mirror and hits the same photographic plate. This is called the reference beam. A hologram forms where the two beams meet up in the plate.

“To turn the concept into a polished image, Dee's design team found a real dove and photographer and they set to work. They wanted to photograph the bird in flight, so they tied its legs together so it couldn't land. “The photographer took over 100 pictures, and if you looked carefully, you could see the legs tied together,” Murdoch said.” -Quoting from VISA The Power of an Idea (Copyright 2001 Visa International), Page 181.



“But what good did this do us when the conditions of illumination itself had fundamentally changed? Could the School of Paris account for Edison, General Electric, and Sony? Impressionism was said to have sprung partly because of the invention of oil paint tubes, but what about cathode tubes? Far from Aix-en-Provence where it was last theorized in time and space, color was then in an overt relationship with bulbs and television, and would eventually be between a rock and a (digital) hard place in which illumination exists in some infra-thin space between pixel and monitor. In mechanical reproduction, all color is essentially a compromise formation between your rods and cones and the viewing platforms where they hit RGB and CMYK.”

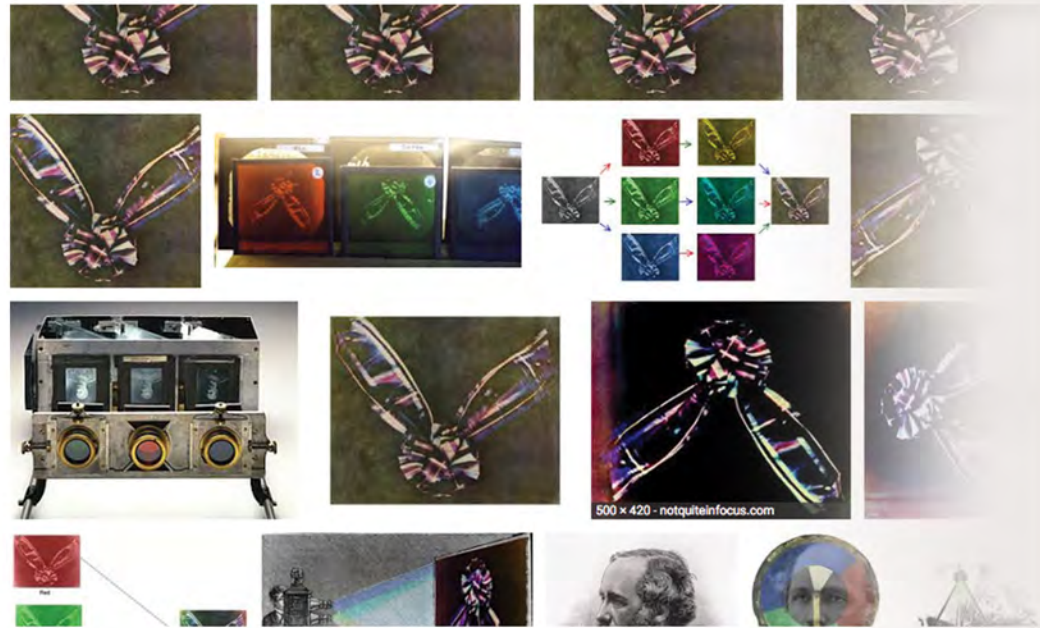
-Amy Sillman, *On Color* (as published in *Painting Beyond Itself: the Medium in the Post-Medium Condition* by Sternberg Press, 2016)



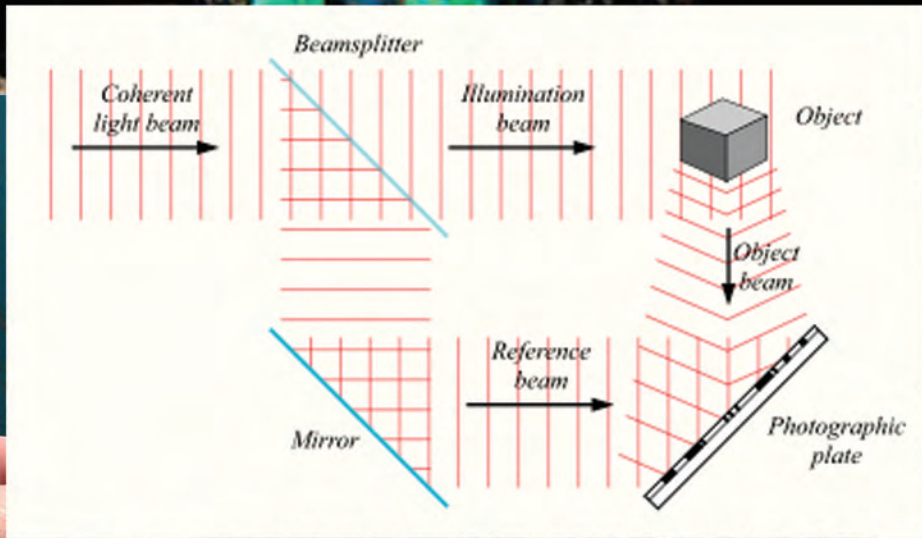
Miyoko Ito



Tacks!  
(Badass)



(google image searches: Maxwell +Tartan+Ribbon)



Nicole Mauser, *Untitled (After Silver Surfer)*, 2017, oil on canvas, 23 x 20 in



“America is a giant hologram, in the sense that information concerning the whole is contained in each of its elements. Take the tiniest little place in the desert, any old street in a Mid-West town, a parking lot, a Californian house, a BurgerKing or a Studebaker, and you have the whole of the US - South, North, East, or West. Holographic also in that it has the coherent light of the laser, the homogeneity of the single elements scanned by the same beams. From the visual and plastic viewpoints too: things seem to be made of a more unreal substance; they seem to turn and move in a void as if by a special lighting effect, a fine membrane you pass through without noticing.”

-Jean Baudrillard, “America” (1989).



Nicole Mauser, *Untitled*, 2018, Oil and acrylic on gessoed paper, 11 x 15 in.



Previous pages:

A Classic First Phase Chief's Blanket, Ute Style, Navajo, circa 1830. The blanket measures 72 inches wide by 56 inches long, as woven. Currently in a private collection in St. Louis, Missouri. Photograph by Joshua Baer - ©2012 by Joshua Baer & Company.

During a visit St. Louis Museum of Art with artist and friend Kate Perryman, I viewed a similar blanket to this one in the collection. Seeing it under low light behind glass to preserve delicate fibers was definitely hallucinagenic. The indigo dye vibrates against warm black and white stripes in a boldly minimal traditional Navajo design. I wonder if early modern artists such as Sophie Taeuber-Arp were aware of such work or and borrowed motifs for Dadaist costumes, collages and textiles in early 1900's?

The indigo in the blanket also reminds me of Oliver Sacks (from *Altered States* published August 27, 2012 Issue of *The New Yorker Magazine*):

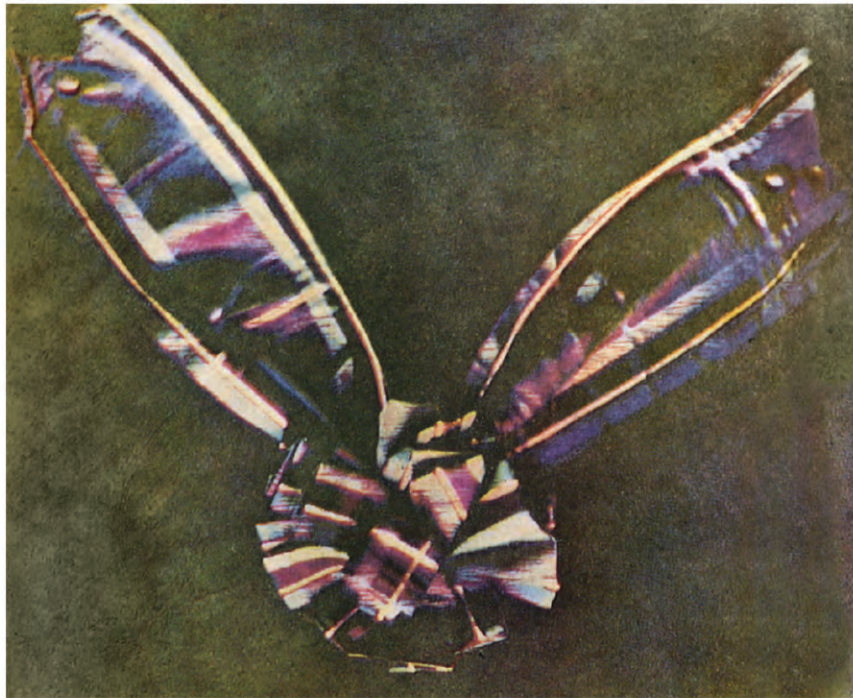
“And then, as if thrown by a giant paintbrush, there appeared a huge, trembling, pear-shaped blob of the purest indigo. Luminous, numinous, it filled me with rapture: it was the color of heaven, the color, I thought, that Giotto spent a lifetime trying to get but never achieved—never achieved, perhaps, because the color of heaven is not to be seen on earth. But it existed once, I thought—it was the color of the Paleozoic sea, the color the ocean used to be. I leaned toward it in a sort of ecstasy. And then it suddenly disappeared, leaving me with an overwhelming sense of loss and sadness that it had been snatched away. But I consoled myself: yes, indigo exists, and it can be conjured up in the brain.”



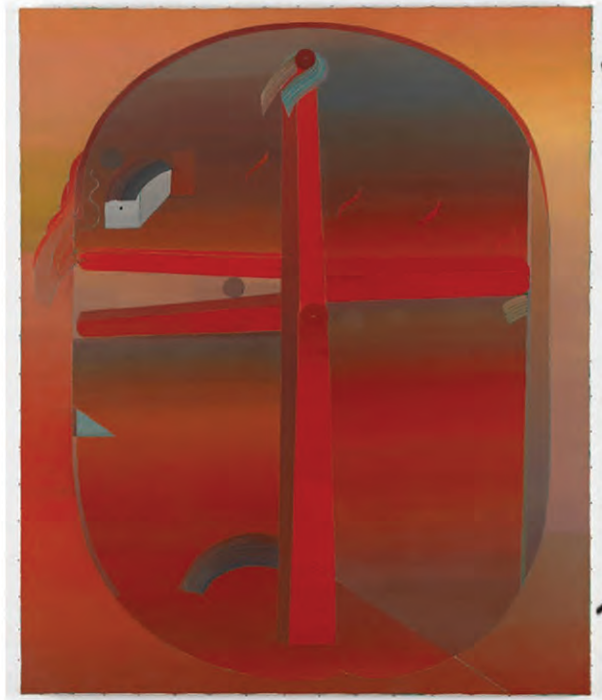
Sigmar Polke's installation, *The Young Acrobat* (2000), an immersive room covered in repetitive hand xeroxed copies, is what I imagine it would be like inside a hologram. John Kelsey refers to these as, "Hallucination Machines."



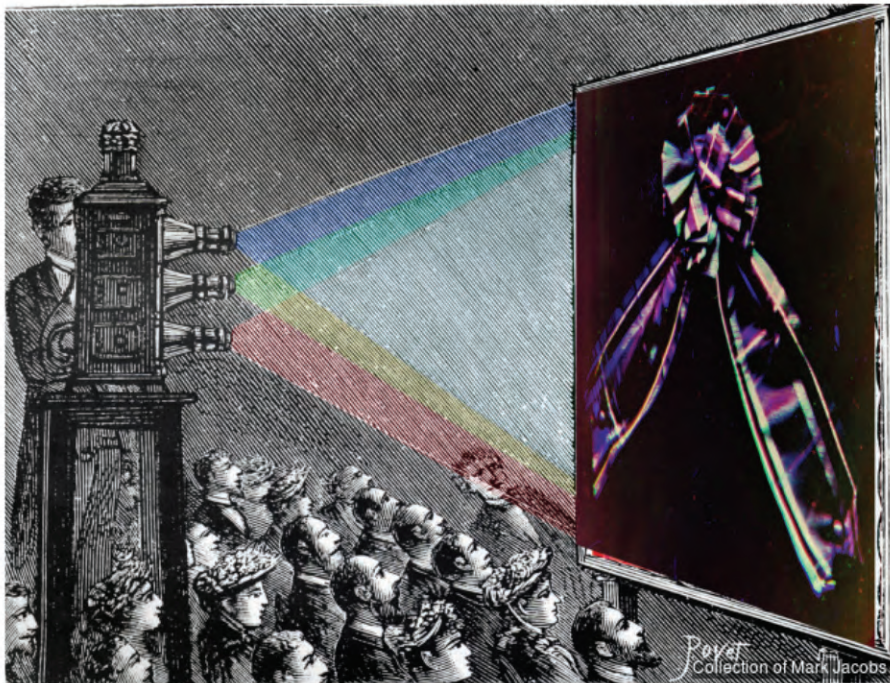




Miyoko Ito



Tacks!  
(Badass)



James Clerk Maxwell Tartan Ribbon, 1861







Louise Bourgeois, *Untitled* (detail) (1998–2014), suite of eight holograms, each about 11 x 14 inches (mage courtesy Cheim & Read)

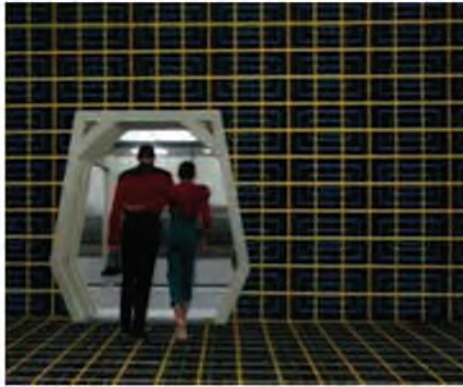






Giacomo Balla, *Iridescent Interpenetration No.7*,  
*Compenetrazione iridescente* Oil on canvas with artists' original  
frame, 83 x 83 cm, 1912.

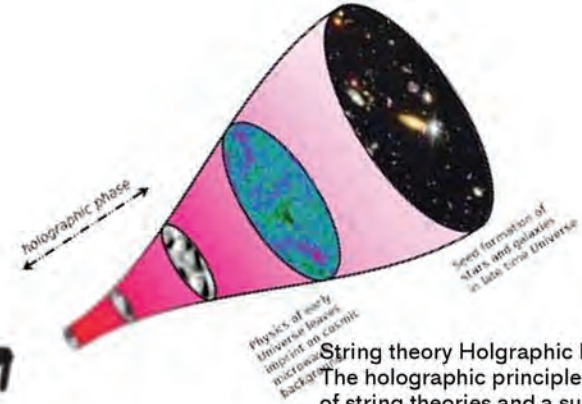




"Holodeck"  
USS Enterprise - NCC-1701-D (or Enterprise-D)  
is a 24th-century starship in the fictional Star Trek  
universe and the principal setting of the Star Trek:  
The Next Generation



Star Wars Episode IV (1977)  
R2-D2 projecting a message of  
Princess Leia Organa



**String theory Holographic Principal:**  
The holographic principle is a principle of string theories and a supposed property of quantum gravity that states that the description of a volume of space can be thought of as encoded on a lower-dimensional boundary to the region—preferably a light-like boundary like a gravitational horizon.



Jem and the Holograms  
(80's animated alter ego generated by holographic computer, known as Synergy, built by Jerrica's father; accessible by means of the remote micro-projectors earrings)



\*Not a Hologram:  
Tupac at Coachella (2012)  
CGI projected using mylars and mirrors)



90's Trading Cards



**HOLOGRAPHIC CAMOFLAGE:**  
Spectral Camouflage Holographic Coating for  
Photovoltaic Solar Panel  
Dept of Defense, Army (2001)  
PHYSICAL OPTICS CORPORATION  
<https://www.sbir.gov/sbirsearch/detail/272038>



Woven into currency

**HOLOGRAMS**



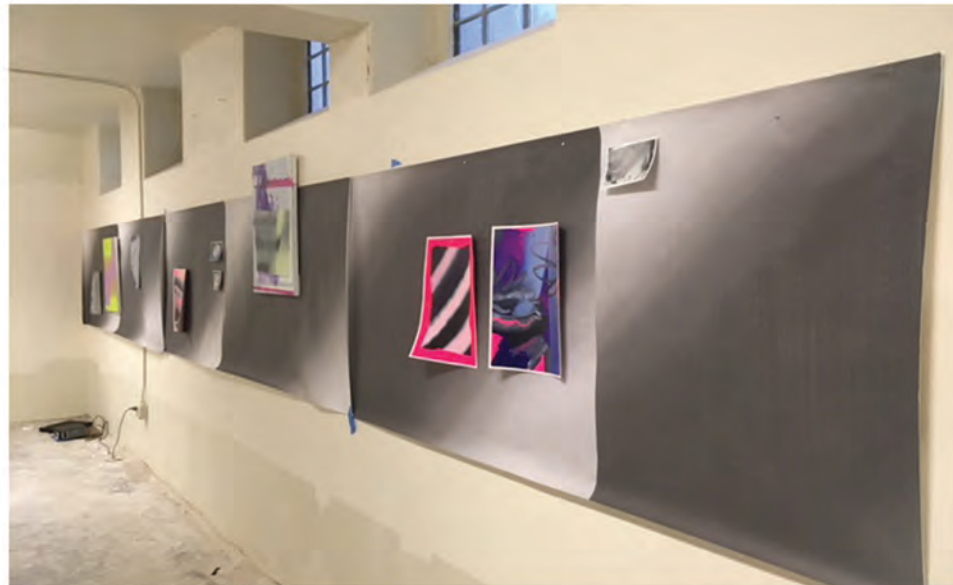
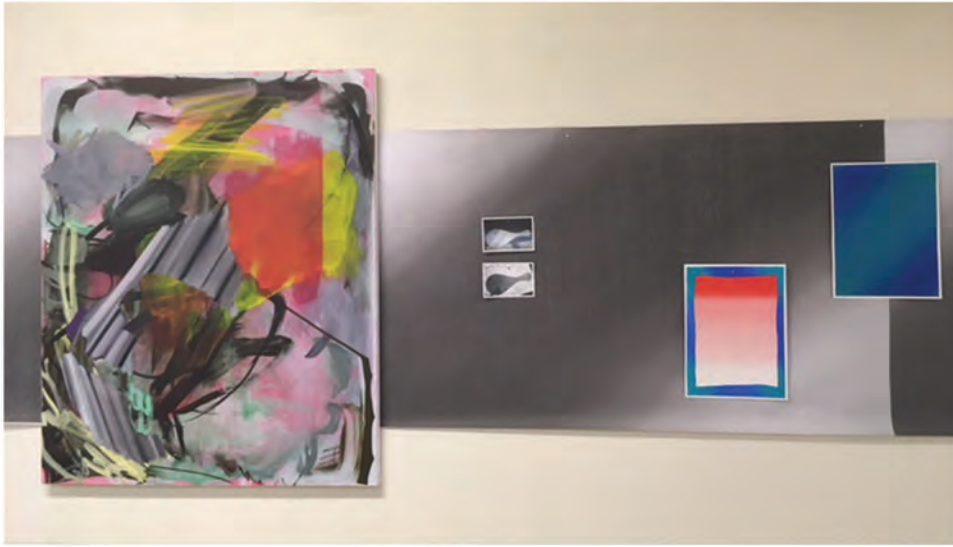


Installation details (above and left):

Oil and solvent painting on banners transferred to digital collage printed on perforated vinyl and installed on exterior windows of Notre Dame Center for Art & Culture, April - June, 2018.

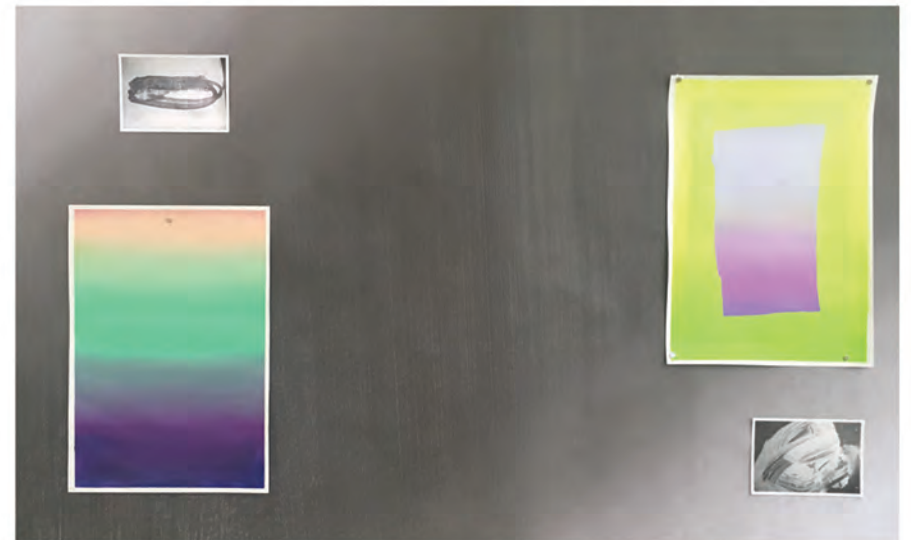
Installation assistance by Alex Schaufele and Lucas Korte.





Installation detail: Oil on canvas, oil on paper, and 35mm black and white photographs on top of scanned detail of painting printed as xerox.

Crossroads Gallery, Notre Dame Center for Art & Culture,  
April - June, 2018



Installation detail: Oil on paper and 35mm black and white photographs on top of scanned detail of painting printed as xerox copy (background).

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