Acrylic Pouring with Silicon

Moving Image: Alejandra Abad - MFA Art Practices Candidate
Music: Vinyl Video - Fugue State
Team 4 pouring experiment: Alejandra, Nebiyu Tadesse, Jared Moya
Team 4 planning idea: Alejandra Abad, Dimario Cancanon, Jamie Frankel, Nebiyu Tadesse, Jared Moya
Assignment: Team First
Class: Flow Visualization - ARTF 5200-001
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First Paragraph: In the assignment Team First, our objective was to show the Rayleigh-Taylor instability by pouring acrylic onto a canvas. This paint pouring technique was used in the 1930's by David Alfaro Siqueros, who discovered the "accidental painting" ("Art and Physics", 2019). Our experiment on fluid dynamics of paint is very similar to the one of an art historian Sandra Zenita. Zenita collaborated with physicist Roberto Zenit to explain the different layers, densities and viscosities. Just like Team 4, they wanted to know why they paint looked like that. In many ways Team 4 explored the same ideas that they discovered, "Although the instability causes the paints to mix together, other physical processes help determine what the painting will look like. Viscosity — or the "thickness" — of a fluid partly determines how far the paints will spread before drying. ("Art and Physics", 2019).

Second Paragraph: Our experiment relied on the right viscosity. Nebiyu, Jared and I made sure that the silicon water and acrylic for each different color were very well mixed. We poured each color one at a time into a glass cup. We added white paint around the edges of the cup on the canvas. Then we lifted the cup from the canvas, we noticed the flow on the canvas displayed different densities. One could see the paint push against one another. The way the paint rested on top of the others creating cells was very fascinating to watch. It occured very quickly. Accidental painting makes use of Rayleigh-Taylor instability, which occurs at the interface between two fluids with different densities as an upper layer of dense white paint pushes on the lower layer of black paint (Poffenberger, 2019).

Third Paragraph: We used the visualization technique of pouring acrylic onto canvas and moving the paint by changing the angle in which the paint rested on the canvas. We used a glass cup to place all the acrylic paint into. We put the canvas on top of the

mouth of the glass and flipped it. We rested the canvas with the cup upside down on the pedestal. After that, we poured white paint on the surface around the edges of the glass cup and waited a couple seconds before lifting the glass cup from the canvas. We were able to photograph and capture the Rayleigh-Taylor instability. Materials: Heat gun, acrylic paints, 100% silicone, water, a pipette, mixing sticks, three cups for each color mixture, a plastic cup for the mixing of the dark blue acrylic paint, a plastic cup for mixing the bright yellow paint, a plastic cup for mixing the bright green acrylic paint, one plastic cup for the white acrylic, one glass cup to pour all three colors into, and a canvas. We were successful when we decided to mix the paints with the water really well until the paint had the right viscosity. Jared and Nebiyu each mixed a cup of acrylic paint with 7 drops of water using the pipette and two drops of silicon. I mixed the darker paint with twice as much water and twice as much silicon. When we were ready we all took turns to pour one at a time a color into the glass cup. When everything was ready we lifted the glass cup and took pictures of the moving liquid.

Fourth Paragraph: We used my art studio, we turned the lights off. We used two LED lights and we placed the canvas low to the ground on a pedestal. We lifted the canvas and allowed the paint to fall by changing the angle in which the paint rested on the canvas. We got really close to the paint.

- The size of the field 4 inches and 2 inches from the canvas.
- The width 6 inches.
- The Distance from the paint to lens varied from 2 inches to 4 inches.
- I used a Canon EF-S 18-55mm
- I used a Canon EOS 30 D digital camera.
- Original and final video 1920 x 1080 aspect ratio
- Exposure specs: Aperture 5,ISO setting 200, f5.6, iso 200, shutter speed 1/30
- Imovie & Photohop

Fifth Paragraph: Three acrylic pours created images that are very beautiful as well as two canvas that we let dry vertically. The first acrylic pour was done on the bottom of the canvas placed to the right. The second pour was done on the top of the right canvas. The third pour was on the canvas to the left. We were all really happy with the end result. When we used the heat gun, it mainly wrinkled the paint and we weren't too happy with that effect so decided to stop using it. We mainly focused on the fresh pouring and the unique moments when cells showed up.

Works Cited

Poffenberger, Leah. “Blending Paint with Physics.” American Physical Society, vol. 28, no. 1, Jan. 2019, https://www.aps.org/publications/apsnews/201901/paint.cfm.

“Art and Physics Converge: Accidental Painting.” PhysicsCentral, https://www.physicscentral.com/explore/plus/accidental-painting.cfm.

Art, Wigglz'. “Fluid Painting Dirty Pour Cup POPPING!! Really Neat Technique Please Watch!!” YouTube, YouTube, 5 Nov. 2017, https://www.youtube.com/watch?v=dLxjQsAyfWo.