

What I talk about when I talk about the breath

January 2010, I joined a nine month 250-hour yoga teacher training program. But not to teach, for very selfish reasons. It was personal. At that time, I had been practicing meditation. My day job was Senior Web Designer but my favorite hobby meditation. I am a somewhat anxious person by nature: an introvert, intuitive, emotional and detail obsessed. Meditation was about releasing control and quieting my mind... relaxing. A very necessary and enjoyable practice for me. So, I meditated weekly with buddhist monks and about a dozen other free thinkers.

Yoga as a practice was created as a preparation for mediation. I'd always been eager attend classes but never made the connection in the community or half-price sessions I'd attended. I wanted a community and some bootcamp-style order to my practice. I wanted to understand why I was doing each pose and how my body and mind were responding to each pose. And most importantly, I wanted to prepare my mind for meditation.

Back in January 2010, I also had just moved to West Seattle: best side of the city with breathtaking views of everything, restaurants and boardwalk. And three lovely yoga studios. I tried the hot ones. But what I had a conversation with my dad that gave me clarity.

At this time as well, my stepfather had the beginning stages of emphysema. His therapist had been doing breath work with him as a calming tool. With a yoga teaching program focused on the breath and healing, I could help. I found a studio, Sound Yoga down the street from my apartment and began training.

Pranayama Prāṇāyāma is a Sanskrit word meaning "extension of the prāṇa or breath" or "extension of the life force." The word is composed of two Sanskrit words: *Prana*, life force, or vital energy, particularly, the breath, and "Ayama", to extend or draw out.

Prana (the breath) is a subtle invisible force. The life force that pervades the body. The body and the mind have no direct connection.. they are connected through Prana only. It is the connecting link between the body and the mind. – Swami Chidananda Saraswati

As much as the ancients commonly linked the breath to a life force, it also refers to the breath as returning to God when a person dies.

Bubbles and other random facts.

Plateau's laws describe the structure of soap films. Many patterns in nature are based on foams obeying these laws. These laws were formulated in the 19th century by the Belgian physicist, Joseph Plateau from his experimental observations of soap bubbles.

Plateau's laws describe the shape and configuration of soap films as follows:¹

1. Soap films are made of entire smooth surfaces.
2. The mean curvature of a portion of a soap film is everywhere constant on any point on the same piece of soap film.

¹ bBall, 2009. pp. 66–71, 97–98, 291–292

3. Soap films always meet in threes along an edge called a **Plateau border**, and they do so at an angle of $\arccos(-1/2) = 120^\circ$.
4. These Plateau borders meet in fours at a vertex, and they do so at an angle of $\arccos(-1/3) \approx 109.47^\circ$ (the tetrahedral angle).

In March 2013, I began my bubble obsession. I decided to explore one material: bubbles and one method of interaction: capturing. But capturing meant a still frame. A bubble is a wet moment. You can't just capture and keep it forever. I realized I needed to look at a lot of bubbles. Interested in physical computing and Arduinos, I decide to make a bubble blowing machine to better to study their behaviors.

Based on an instructables.com post, I set on building this bot. It required laser-cut parts, acrylic adhesive, a 12V fan, and a DC motor. I build a 2nd version by making a 3d printed trough for the bubble solution. The documentation of the bubbles created were helpful in the creation of a tool to create a digital artifact or behavior that resembles blowing bubbles. Ultimately the BubbleBot prototype helped me design code which mimicked soap foam formations. I also spent many hours plugging in wires and testing code. It was fun but complicated.

Plateau was the first person to demonstrate the illusion of a moving image. To do this he used counter rotating disks with repeating drawn images in small increments of motion on one and regularly spaced slits in the other. He called this device of 1832 the phenakistoscope. Fascinated by the persistence of luminous impressions on the retina, Plateau performed an experiment in which he gazed directly into the sun for 25 seconds. He lost his eyesight later in his life, and attributed the loss to this experiment.

I have always been interested in the magic of the unseen: the formal structure of code, the syntax of language, and the energy and emotion in experience. Resolving the digital and systemic manifestations of these relationships has been a theme in my work. The experience of things in and outside of the physical level. These interests have led me to experimentation with the phenomena in nature. There is a poetic nostalgia in the simulation of memories.

A month prior to my thesis installation, my father passed away. His life, so full, so influential... cut short due to battles with this simple task most of us do without a thought. Life is a temporary thing. It's not necessarily promised but what does last is the experience. The memory of life, the simulation of the memories and the capturing of the experience of joy, happiness, growth and even the ugly bits within a person or shared between people.

In his memory, I wanted to focus my bubble investigations on the bigger picture. An extended transcendent experience of the simulation of life of an essence. With the breath, the life force and input data. Determining the existence of these temporal moments. Just moments... sometimes large and billowy, at other times sputtering and barely there. I wanted the experience of my space to be poetic and to feel like a moment of life. But honestly, the challenge was finishing my work. After the funeral, after burying my father and then returning to MICA to finish what I started, I found my mind cloudy and my motivation spotty at best. I could only finish. Making changes or fixing problems became an impossible feat. Not a good look for an interactive installation and digital + hand fabricated paper curtain.

My installation consisted of a flowing white paper curtain of a digital pattern that followed the structure of bubble foam clusters. I lasercut 40 sheets of paper and then hand-cut and combined them

all to a 12 x 12 feet curtain. For days I edited mismatched parts with an exacto knife. Carefully cutting and pasting bits were necessary to make the tiled pieces more seamless. The construction was a beast but in the installation space, it was magnificent. Although done meticulously by hand, the hanging structure was soft and human with flaws and a voice. The light shining thru the windows gave it a different voice between day and night and all remnants of it's digital construct were washed away.

My curtain hanging securely in the space looked similar to my fathers lungs. Holes throughout which were the cause for his discomfort, his shortness of breath and ultimately his last breath. The only thing I can see is it wanted to honor him with this work. I know he was proud of my hard work in school, my masters degree, the great job I was able to land in January just waiting for me to start in June. I struggled with it though. And still do, my choice to study, his fight for life and ultimately me losing him before he was able to see its completion or my graduation.

My practice of creating I can definitely say has an element of clairvoyance. An element of intuition and knowing. My thesis studies have shown that to me more than ever. And I can't say that it makes for a happy ending. To breathe life, to simulate life, humanity, nature... only for moments. It's all so temporal. And does it then transcend? This not a story about bubbles. This is an exploration in seeing the unseen, feeling the hidden undertones of what surrounds us and capturing and simulating life in moments.

References

1. Ball, 2009. p. 68