

# KATIE HATAM WHAT HAPPENS WHEN YOU FOLLOW AN OBJECT INSIDE A BLACK HOLE?

*“I do not want to be a windowless monad...but I go blind out there. So writing involves some dashing back and forth between that darkening landscape where facticity is strewn and a windowless room cleared of everything I do not know.”* (Johnson)

I just spent ten weeks doing a lot of stuff, but none of it will make any sense if all I tell you is what I did. After all, it didn’t really make any sense to me. Instead, I will tell you what happened.

*“That deepest place of meaning, where we really meet, that’s where the good stuff happens.”* (Posakany)

*Making Meaning Matter* was a process of discovery for me. Not of me, but everything that wasn’t me. But how do you discover that which is not you, when you are intimately connected to the only source through which you discover: your mind? And, how do you discover that *new* without instantly trying to understand, organize, categorize, the experience into some semblance of what you *already know*? The answer might be easy, presence, but the practice is much more difficult. And isn’t it the mind, that thing we use to discover our world, that is exactly what gets in the way of being present?

*“Everything changes. Everything is connected. Pay attention.”* -Jahe Hirshfield

A friend recently put it perfectly, metaphorically. He said, “Nobody knows what is inside a black hole. You can’t see beyond the event horizon.” Yet, there are no distinguishing features of the event horizon, so there’s no way to know when you are in the black hole. “Being inside a black hole is like being inside this moment. But, as soon as we stop to think *am I present?* we are no longer present.” We are no longer inside the black hole and we can no longer know what is inside that moment.

*“What I do not see I do not know...I see, hear, and know simultaneously, and learn what I know as if in a moment.”* (Norris, 9)

His metaphor captured my attention. I asked *what happens when you follow a Blue Rabbit down a Black Hole?* I wanted to know what would happen when you send a concrete object into an abstract world.

How could I use a physical object to quantify, qualify, and clarify what I had not been able to? Could this object help me to see what I have not yet seen? To find what I was looking for—the not-me, the invisible? Some portion of my project had to be 3D printed, but I wanted to create something that was alive, responsive, intuitive, and vulnerable and inspires the people who come into contact with it.

*“...all these things and more, all dreams of sketching my heart onto something solid, something apart from myself.”* (Bowden, *Blues*, 272)

But I used the term *create* quite loosely, as in I, the student, would design and 3D print an object. I also knew that in a program called *Making Meaning Matter* although I, the student, would be creating, I, the human being, would also be created. And perhaps, more specifically, the not-me, that I had not yet discovered.

*“...by knowing what things are, and how they were made what they are, you gain an understanding about what minds are and how they become what they are.”* (Malafouris, 9)

But the only way to learn what happens to an object inside a black hole is to enter the black hole with it. If I’m in a black hole, then how am I, the human being—made up of matter—the information of which is lost once entering a black hole—being created? If it is not my human-matter being created, then it can only be my human-meaning, my mind, which is being created.

*“If it is my nothing-ness I am afraid of, the best way to resolve that fear is to become nothing.”* (Loy, 503)

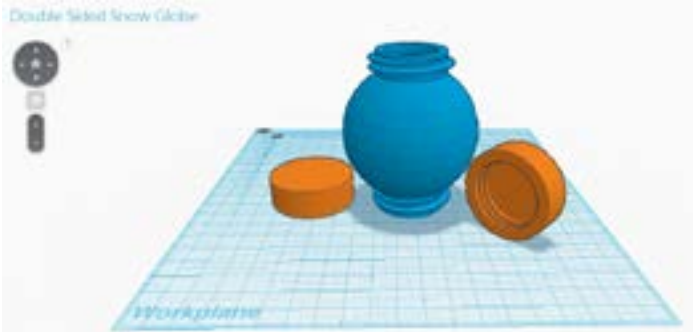
And my object, also being made of matter, was lost inside the black hole. Does my object have a mind? And if so, how do I observe it? Or am I simply observing my own mind observing the idea of my object? And, as I metaphorically entered a black hole, I can now only reflect on what happened in those black hole moments. What happened when I interacted with the idea of my object, with my physical object and with the ideas and physicalities of the other components of my project, the materials and theories of the scientific methods I stumbled upon?



*“What kind of connections might be imagined as taking place between these various atoms?”* (Johnson)

I theorized, given the right conditions and variables, one could see the shape of the magnetic field created around an object. I would demonstrate this with a magnetic field viewer; you would be able to see the magnetic field taking place inside a translucent sphere. The sphere would be filled with water and ferrofluid, a mixture of dispersed nano-scale magnetic particles and a viscous solution, easily made at home using laserjet toner and vegetable oil. When ferrofluid is placed in the presence of a magnet, it becomes magnetized and takes the shape, usually in spikes, of the flux lines of the magnetic field.

*“Let’s point to the invisible with each other.”* (Woolf)



Katie Hatam. Double Sided Snow Globe. Olympia, WA.

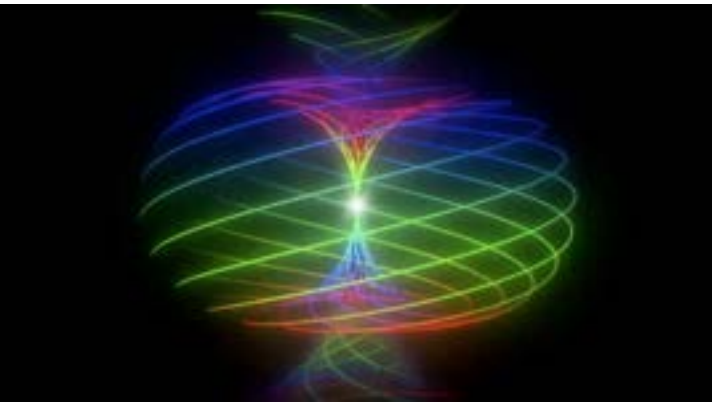
The execution of this idea evolved through various design phases. In the first phase, the magnets would act on the 3D printed object. The particular shape of the object was going to be one of two; either the vector equilibrium, or the torus. Why these shapes? They have been found to be the basic building blocks of the world we live in today. I discovered these ideas during my initial research. I felt in that moment I had hit the event horizon. I was completely bewildered by what I was reading and watching in the videos I saw. I recognized pieces of me that showed up throughout my own life. But I was finally beginning to see the not-me behind, or inside, the me. I had entered the black hole.

*“It was like vertigo, that feeling.”* (Doctorow, 277)

The shape of the torus was especially intriguing to me. It was the shape of the energy fields that sur-

round every living thing. The images I found ranged from simple donut shapes, to animated multi-dimensional spirals that seemed to originate from the center, reach out in every direction, yet always return to the same center, and what some call the black hole of the toroidal energy field. Might this be the way to see the not-me?

*“...we see our nature mirrored up to us, but seen as if anew.”* (Benfey)



Spirit Science. Toroidal Flow. YouTube. com. 6 Nov. 2012. Web. 7 Dec. 2014.

I shared my enthusiasm with my peers. I described my project with a naïve, child-like wonder, not really sure how I was going to make it happen, but excited to learn. After all, I was no scientist, nor had I ever had any interest in learning anything about magnetism prior to stumbling onto this idea. I became fascinated with the idea of naiveté, of *not knowing*, so I might discover that not-me.

*“Dare to be naïve.”* Buckminster Fuller

I became determined to discover what I could about my project through exploration, rather than research. I didn’t want to learn what was already known. I wanted to learn what was un-known. Except I was exploring this abstract concept through a concrete object and established scientific theory. How could I discover something *new* when I was constantly confronted with the *known*?

*“I am always doing that which I cannot do, in order that I may learn how to do it.”* Pablo Picasso

The process began to put a damper on my enthusiasm. When I was naïve, following my whims, I was present to possibility, to discovery, to exploration, to learning. I

Everybody wants me to print their stuff, but does anyone ever ask me what I want? No! I just want to sing!



was in the black hole and in the moment. Then I would have to find something concrete to grasp, with which to do my research, to ground my abstract thoughts and put them into a coherent display of what I was attempting to do. And I would lose it; my enthusiasm, my energy, my black hole.

*“You can know some things and the knowing seems to help you not at all.”* (Bowden, Blues, 41)

What I imagined was not manifesting itself in reality. Watching a virtual digitally animated video of a rotating toroidal magnetic field around an object was not as easy to generate in reality. I discovered that the magnetic field lines I wanted the ferrofluid to travel were not animate. A magnetic field was a force, not a movement.

*“There’s nothing here that isn’t as it should be.”* (Doctorow, 82)

But I was determined. The next design phase was to simply 3D print a clear sphere through which to see the magnetic field. After deciding on the design, it was relatively easy to print. But I needed a clear filament; easy to order, but not so easy to print with. After several hours of downloading and learning the software, prepping the file, and learning about and prepping a new printer, the clear filament clogged the printer nozzle. My sphere did not print.

*“I have no word for my feelings. I am not alienated. I am not lost. I am not angry. There, that is it, a clot of nots, and somehow I cannot muster a single actual word to describe this sensation. I am not depressed, ah, there it is again, another claim of something I am not.”* (Bowden, Some, 93)

The 3D printing aspect of my project wasn’t working, but I was still excited with the possibility of seeing a magnetic field, seeing the invisible, so I began my work on learning about magnetism. I had already bought the ingredients to make the ferrofluid so I started

experimenting. I mixed the inkjet toner with the vegetable oil, stirring excitedly as I knew I would soon see the amazing spikes of fluid when I held my small earth magnets to it. However, although the ferrofluid moved with the magnet, it did not spike.

*“The danger of going out of bounds is real.”* (Norris, 42)

I felt somewhat defeated. My theory was not realized. My sphere was not clear. My ferrofluid did not spike. I began to wonder if being so determined to see the invisible, of daring to be naïve, of learning something new, was worth the pain of being reminded that I did not know what I was doing, and I was failing miserably. The me I knew was staring back at me from the mirror, but the not-me was nowhere to be found.

*“...the pain that comes from one’s identity...can’t be escaped or pushed aside. It must be gone through.”* (Norris, 38)



Rabbit Hole. Arena Solutions. n.d. Web. 21 Oct. 2014.

That feeling of defeat, of failure, I’d felt it before and had beaten myself up enough in my life to let it hold me back anymore. Quite frankly, I would rather be naïve and keep trying than to believe I know, and that I failed, and live with lifelong regret of not facing the fear of failure and moving through it. I decided to let go of the fear and grab hold of the lesson. I was reminded that as much as I was making my object, it was also making me. The shapes, the sphere, the ferrofluid, the magnets. How were these things shaping *me*?

*“What is quintessentially human is the capacity to make meanings, challenge meanings, and transform meanings...”* (Lin, 65)

The vector equilibrium taught me to be alive. I sat, hunched over a computer screen, with John as we attempted to recreate the vector equilibrium using only our long-ago filed-away knowledge of basic geometry. The tetrahedron would have been a relatively easy shape to create for a more complicated 3D software than the one we were using, but that wasn't the point. I was learning, I was laughing, and I was alive.

*“This is the moment. Always the moment. Come back to life.”* (Bowden, Blues, 285)



Goa Lobaugh. Cosmometry.  
n.d. Web. 7 Dec. 2014.

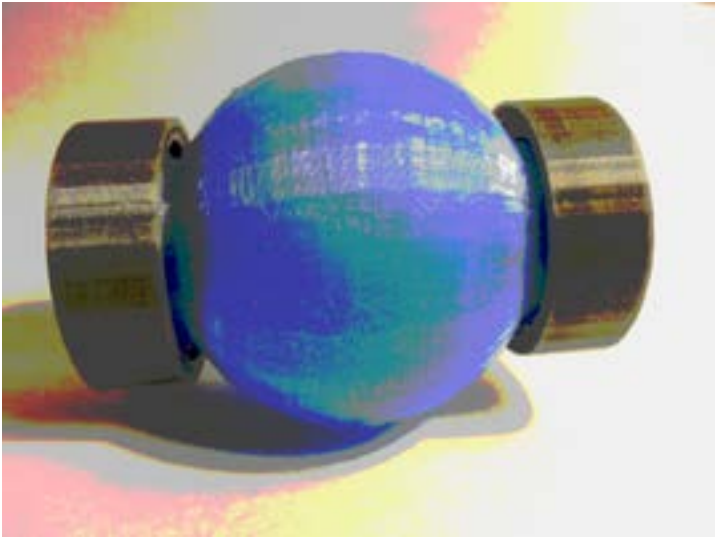
The torus taught me to be responsive. My energy comes from constantly revolving my inside out, my outside in. I should express my inner thoughts and feelings and passions more readily, and reflect more on what is happening around me. Having this constant flow of my inside out and the outside in will keep constant and tangible that invisible magnetic field, the not-me, I was attempting to see.

*“Each thing in the universe is both a mirror, reflecting all, and an image, reflected by all.”* (Loy, 483)

The sphere taught me to be intuitive. To trust myself and yet have compassion for myself. The process of becoming transparent is not easy. Transparent things that hold their shape are not made easily or overnight. Glass must be subjected to intense heat, and become a flowing liquid before it can be molded and shaped. Diamonds are only created after billions of years of intense pressure have squeezed out the exact atomic structure that the hot plasma of the earth spewed forth. I am not wholly transparent, authentic.

I have my flaws. I am human. But I can trust and have compassion for myself.

*“The [sphere] brought forth the [compassion] by making the manipulation of [its] properties visible and tangible.”* (Malafouris, 115)



Katie Hatam. Printed Sphere. Olympia, WA. 2 Dec. 2014.

The ferrofluid taught me to be vulnerable. I can't take the easy or cheap way out. There might be more than one way to do something but the good stuff comes through hard work and willingness. I won't spike if I'm being lazy. I have a little more learning to do before I will be able to reach out into the world the way I desire. It will only be through opening myself up and being willing to be flexible to the forces around me that I will reach my soul's desire.

*“Openness always costs something. But we get a lot of benefits out of openness, too.”* (Doctorow, 271)



Ferrofluid.  
Wikimedia Commons.  
Web. 7 Dec. 2014.

The magnets taught me that I am inspiring. There are forces operating inside of me that even I can't control, nor can I understand them. I broke one of my magnets. When I attempted to put it back together the poles had flipped. What had once been whole and worked so perfectly, when broken off, no longer worked. The two halves could not go back together,

yet the magnet was still a magnet and still did what it was supposed to do. The two pieces no longer needed each other. Sometimes breaking isn't a bad thing. It's a transformation that can never be undone, but doesn't need to be undone either. I broke my project, and in the process broke myself, but I still managed to inspire others to make meaning out of their matter.  
*“...is it the trauma that knocks part of the self inside into another place so as to begin pearl-making?”* (Taussig, 106)

It would be inauthentic to say that these lessons were *learned* in the black hole, in those moments they happened. It is only now, upon my reflection, with these words written, these meanings made, and the matter which I created, made meaningful, that I have discovered a little of that not-me I had been searching for all along.

1. Benfey, Christopher. “How Bad Are the Colleges?” The New York Review of Books. 23 Oct. 2014. Web. 27 Oct. 2014.
2. Bowden, Charles. Blues for Cannibals. New York: North Point Press, 2002. Print.
3. Bowden, Charles. Some Of the Dead Are Still Breathing. New York: Houghton Mifflin Hardcourt, 2009. Print.
4. Doctorow, Cory. Makers. New York: Tor, 2009. Print.
5. Johnson, Don. “Sitting, Writing, Listening, Speaking, Yearning: Reflectinos on Scholar-Shaping Techniques.”Body Movements: Pedagogy, Politics, and Social Change. Eds. Shapiro and Shapiro. Hampton Press, 2002. Ch 4. Print.
6. Lin, Yi-Chieh Jessica. Fake Stuff: China and Rise of Counterfeit Goods. New York: Routledge, 2011. Print.
7. Loy, David. “Indra's Postmodern Net.” Philosophy East and West. July 1993: 481-510. Print.
8. Malafouris, L. (2013). How Things Shape the Mind: a Theory of Material Engagement. Cambridge, Massachusetts: MIT Press.
9. Norris, Kathleen. The Cloister Walk. New York: Riverhead Books, 1996. Print.
10. Posakany, Theresa. The Art of Participatory Leadership. Olympia, Washington. November, 2014. Workshop.
11. Taussig, Michael, and Russell Storer and Jessica Morgan. Simryn Gill. Verlag der Buchhandlung, Walther Konig. 2009. Print.
12. Woolf, Tenneson. The Art of Participatory Leadership. Olympia, Washington. November, 2014. Workshop.







Sperling, Karen. Roller Coaster Dreams #8. n.d. [www.karensperling.com](http://www.karensperling.com). Web. 4 Dec. 2014.

“Something happened in the maze, between entering it and leaving it, they lost their cares...As they neared the exit, they started to strategize about the best ride to go on next.” (Doctorow, 362)

The ride is coming to an end. For most of us, it was worth every moment. But that doesn’t matter. We rode the ride. Bewildered, we started in the abstract, heading straight up the pike. At the pinnacle, we free-fell, hands up, at warp speed through the conceptual. Enacted, yet enervated, we finally arrived at the concrete. We laughed, and sometimes cried, and we lived to tell about it. We even got a souvenir to take home. And it was fun, and scary, and exciting, and confusing, and intimidating, and frustrating, and weird, and familiar, and ours. It’s our story.

“Every good thing comes to some kind of end, and then the really good things come to a beginning again.” (Doctorow, 388)

This post summarizes what we all experienced in *Making Meaning Matter*. Borrowing from the ride and story metaphor of *Makers*, it also perfectly represents Malafouris’s theory that as we make things, so do things make us. As the story made the ride, so did the ride make the story. Our ride through *Making Meaning Matter* made our story, and made us.