Lindsey Lopes

**Disruptive Symbiosis:**

**A Reflection on Language and Representation**

It’s hard to even know where to begin this reflection, the BioArt project seems like a fantastic the culmination of four years of scientific coursework, two formal courses in disability studies and disability studies, and lots of informative and thought-provoking conversations that have happened over the course of my time at Haverford. During the exhibition opening, I was talking to Stephanie about the development of partnerships between adults with intellectual and developmental disabilities and college students. I told her that, at a place like Haverford, we value, or at least discuss the value in, lots of different kinds of diversity but we also pride ourselves as being an “intellectual” school. That doesn’t leave a lot of room for people with intellectual and developmental disabilities, and to me, seems to threaten our values of diversity, as it is discounting an entire community of people who have different life experiences than we do. After going to public school my whole life and living with my brother (who has an intellectual disability), entering college was a whole different experience. Anytime I interacted with someone with an intellectual or developmental disability, it was in a loaded relationship- I was the volunteer, or the caregiver, or the “helper”, and they were the learners, or ones needing “help”.

The goal of this partnership was to change these definitions, to create a more (for lack of a better word) symbiotic relationships built upon ideas of holding a space, recognizing value in different forms of being, and interdependency. However, these words have only come after much reflection and thought. Originally, the language that we utilized to talk about the project was that of “experts” and “learners”. In the art studio, the CCW artists would be the experts. In the lab, Sarah and I would be the experts. The dichotomy of experts and learners, and dividing those categories based on locations, helped Sarah and I to find our footing in trying to make this partnership reciprocal. We didn’t want it to turn into a project solely about us “helping” the CCW artists and teaching them about science. What we didn’t recognize was that our expert-learner language was describing exactly that which we were trying to avoid.

*“I felt pretty intellectually confused after our bioart project. It felt weird to me that we weren't giving our participants control over what they were going to make... I have concluded that these three weeks where we were supposed to be the "experts" and the CCW participants the 'learners' was just the opposite. The participants have taught me so much already about myself. Their patience, kindness, and consideration is evident. But, I am getting to learn, more and more each week, how skilled and talented they are. They find joy in making art, are fine if it is not what they had originally pictured, and welcome creativity.”* -Ali Weiner’s Serendip post, 22 Feb 2016

As I often say to Sarah, “words are hard”. Language was, and still is, a really crucial component of the conceptualization of the BioArt partnership. Words, especially words like “expert” and “learner” are thought to be static and imply a power dynamic based upon intelligence and knowledge. We thought of the expert-learner relationship being something that was reciprocal and fluid, allowing people to have an area in which they felt comfortable and an area where they felt uncomfortable. To be an “expert” in a scientific laboratory, in my opinion, means having knowledge about different techniques and being able to make predictions and analyze outcomes of experiments. In my experience, being an “expert” in the lab does not mean that you can control the outcomes of your experiments, nor does it mean that you can immediately explain why something occurred. In many ways, being an expert in lab means that you are comfortable with the fact that it is impossible to be in complete control of your project. Being an expert means that you have knowledge of the tools and resources available to you to explore questions, it does not mean that you do not have anything new to learn. However, I recognize that this meaning of expert is particularly nuanced and may not be true or relevant to other disciplines or to other people with different experiences. Ali’s post opened my eyes to the fact that the expert/learner dichotomy instigates feelings of a relationship where the expert is superior to the learner. Changing the language to make it more reflective of the relationship that we were trying to represent was an important portion of this process. As Michael Berube describes,

*“In our society, representation matters. Some linguistic differences, like some cognitive or genetic differences, are indeed too tiny to make a difference, but some can help to make all the difference in the world. Put that another way: If Steven Pinker is right in suggesting that ‘once the message gets out, the language will change accordingly’, then how can the message get out in the first place, except by way of the medium we call ‘language’?” - Berube, Live as We Know It Epilogue pg 255*

How we were representing the relationships in the BioArt partnership mattered. Thus, the language we utilized was important, and it was important to recognize that, as scientists who have an incredibly nuanced view of what it means to be an expert, expert-learner language may not have been accessible to people who did not have a similar definition of experts. Thus, our terminology may have misrepresented what our goals for relationships within the project really were.

The new language of the BioArt partnership- that of interdependency and symbiosis- is a wonderful blend of words accessible to scientists and nonscientists alike. Symbiosis is a biological term, meaning interaction between two different organisms living in close physical association, typically to the advantage of both (Encyclopedia.com). Interdependency is an idea central to disability studies, and also describes a mutually beneficial and dependent relationship.

Words like symbiosis and interdependence appear to reflect a process that was always comfortable, and always easy. The expert-learner dichotomoy, while problematic, did display the comfort in working in a familiar field, and the discomfort inherent in trying something new. The term “disruptive”, as a modifier of symbiosis, begins to capture this portion of the relationship. We were disruptive in the lab, growing fungi and other contaminants, mashing up agar, using less than sterile technique, and using bacteria/ethanol like paint and water to create living masterpieces. We were disruptive to the scientific community at Haverford- and not in a bad way. Physically, placing a giant exhibit on one side of Zubrow, especially when poster sessions were also happening, has been a talking point. I’ve sat multiple days studying in Zubrow only to have professors come by and talk to me about the exhibit, most of them taking a break from grading or whatever they were previously doing in their offices to experience the art. We also had disruptive sorts of relationships- over the course of the semester there were moments of extreme comfort when working with the CCW participants, as well as moments of extreme discomfort.

Working in the lab with artists from the Center for Creative Works, as well as with peers who are not science majors, made me question some of the rules and boundaries that we set in the lab. Why is it that piercing agar is not okay? Why are most science labs, especially in high school and at the undergraduate levels, product-focused? Why can’t there be days in the lab where you just experiment with ethanol and bacterial paintings, piercing agar, and swabbing random objects for bacteria? Why are only certain people “allowed” in the lab and privy to the true experience of science- that of creativity, experimentation, confusion, and uncontrollability?

These last few questions are getting at one of the critical building blocks of this partnership- the importance of the “outsider” perspective. Outsider artists have long been romanticized as producers of “pure” creations that are not subject to the guidelines of more traditional art. The idea of an outsider scientist is less well-explored, although after some google searching Sarah and I learned that there is a community of “outsider scientists” and people who write about the benefits of outsiders in the scientific fields. In the preface to a book entitled *Outsider Scientists: Routes to Innovation in Biology,* authors Michael Dietrich and Oren Harman write

 “*No one likes an outsider. They know it all, haven’t paid their dues, and often think little of the rules everyone else has been required to play by – except that outsiders are also sometimes godsends, blowing in like a felicitous wind, carrying new energy and whispering new truths. Outsiders often see things differently than those who have been gazing at a problem for a long time, and it is this perspective that makes them so valuable.” -Outsider Scientists: Routes to Innovation in Biology, preface*

One of the questions asked after the talk Sarah and I gave was “What did you guys get from this experience that you can bring back to your own science education?”. I learned the importance of language, of representation, but also the importance of the outsider perspective. Being in the lab with people who were not scientists made me question the boundaries that we, as scientists, place upon ourselves, and also made me think about new an innovative ways to approach scientific concepts and ideas. I was constantly reminded that working with biological organisms, like bacteria in this project or zebrafish in my thesis, requires patience and a willingness to let things get out of control. Sometimes, especially in the product-focused and result-focused world of scientific research, it is easy to forget that scientific research is a creative and uncontrollable process, and that really beautiful and interesting results can come out of the unpredictability.

Looking backwards, I am amazed by what has come out of the initial conversations with Center for Creative Works to create some kind of science-art partnership. I am so lucky to have been able to take part in a project that has grown and changed and am so grateful that this wasn’t just a project that Sarah and I created- it is a project that has evolved and developed throughout the course of the semester and from insights from classmates, fellow biology majors, professors, and people at CCW. As we look forward to writing a commentary on the BioArt experience, I am excited to be able to share such an incredible project with the science community and hope that they are just as welcoming as everyone at Haverford has been.

Works Cited:

Bérubé, Michael. Life As We Know It: A Father, a Family, and an Exceptional Child. New York: Pantheon Books, 1996. Print.

Harman, Oren S, and Michael R. Dietrich. Outsider Scientists: Routes to Innovation in Biology. , 2013. Print.