

Design Fiction as Public Engagement with Synthetic Biology

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The abstract concept of the future often conjures images of post-apocalyptic landscapes or naive utopias. In these scenarios, new and emerging technologies like those developed for synthetic biology are painted as the instruments of our destruction or our salvation, making nuanced discussion about these technologies a challenge for those working to engage publics in shaping technology policy. Participatory exercises and deliberations surrounding anticipatory governance and forecasting are often used to begin these more nuanced conversations. These methods of engaging publics have been successful; however, like consensus conferences and other forms of public deliberation, they may attract a specific, highly motivated, already engaged group of citizens, whereas participation in activities like those developed in informal science learning settings, like science museums, may engage a broader range of people in activities. This paper will briefly sketch an idea for a set of activities that may spark discussion around the ethical and social implications of emerging technologies like synthetic biology.

A number of science fiction authors and designers have begun to develop the concept of design fiction as a way to mitigate these wild musings about the future by focusing on something tangible: a designed object, albeit a fictional one. Bruce Sterling is often credited with coining the term design fiction, however, Julian Bleecker is perhaps the best-known designer working with, and writing about, the genre. His group, the Near Future Laboratory, recently published the TBD Catalog, a book of objects and services from the near future. The Near Future Laboratory describes design fiction as “the platform best suited for taking a sideways glancing blow at a set of open issues, exploring unknown unknowns, working through turbulent alternatives, contesting the status quo and walking down strategic alternatives.”¹ Thus far, design fiction has rested in the hands of science fiction writers and designers, but I believe the design process can be opened up to publics to provide a playful way of beginning conversations about the future. Previous projects provide an indication that 1) Activities that ask participants to engage in an activity rather than a dialogue tend to create more focused outcomes, and 2) that speculative prototyping, or design fiction, provides an excellent strategy for such an activity.

Example: Future of Work Prototyping Activity

To provide a more clear picture of the kinds of activities I envision, I will describe an activity used in a recent workshop Professor Laura Forlano (Chicago Institute for Design) and I created for labor advocates and activists, digital activists, and others interested in technology and the future of labor. During the second part of the workshop, teams were asked to consider the most surprising or unexpected aspect of their experience at the workshop thus far, and to develop it into a prototype. Our initial observations indicated that the groups often began to build their prototype before they knew what they were building. In my own group, we began to discuss ways of rethinking the relationship between employees and healthcare workers. However, we had trouble arriving at a plan of action until we stopped deliberating and began to build. One group member assembled a cardboard box. Another added a head of yarn, and then two more members attached arms and legs. Soon we had created a healthcare robot that we imagined would be owned and maintained by primary care providers, like nurses (see Fig 1). These robot companions would complete the more mechanical tasks, like recording vital signs and taking

¹ Bleecker, J., Foster, N., Girardin, F., & Nova, N. (n.d.). Near Future Laboratory. Retrieved from <http://nearfuturelaboratory.com>

blood samples, while the healthcare worker was able to speak with the patient about their history and symptoms. As we built, we began to think and talk about the implications of such a robot for the healthcare worker and the patient. We also talked about an economic structure where the nurses owned the robots, thus, retaining their job security. Being given cardboard boxes, blue tape, markers, and other supplies, as well as a time limit, suggested the prototypes should be unpolished mock-ups. This created freedom for groups to play with the materials rather than pressure to build something beautiful.

Pop-up Public Biodesign Fiction Labs

There are many ways to adapt the concept of design fiction as a way to engage publics, here, I sketch out one possible way. The pop-up biodesign fiction lab can be deployed in museums, schools, or other public spaces. This activity could easily be tailored to specific age groups. The labs should provide inspiration and opportunities to explore the kinds of work being done in synthetic biology, and encourage low-fi prototyping similar to the exercise described in the future of work example above.

Performative Aspects of the Lab

The lab space should provide a performative, ritual space. When visitors step into the lab, they become bio designers. Perhaps they are given lab coats to wear, or initiated in some way. Similarly, any inspirational or learning materials should be designed as a part of their process. What might be information cards become design briefs. The look and feel of the materials should strike a balance between highly designed space that evokes the character of a lab and an unpolished, almost home-made feel. The idea is to invite visitors to play and create whether or not they are skilled. The materials with which they will create their prototypes might be recycled paper and plastic, or other incongruous artifacts. Design protocols, inspirational prompts, or other activities may guide users toward a particular project.

Discourse Surrounding Creations

The creation of the prototypes itself provides the initial opportunity for discussions about the ethical and social implications of the work, and groups working together or simultaneously will likely begin these conversations. However, in order to gain a sense that their designs are part of a larger conversation, and to begin that conversation, their prototypes should be shared or displayed, or even used in scenarios. One option may be to host improvisational performances surrounding objects created in the lab. Catalogs similar to the TBD Catalog created at Near Future Laboratory may be created as well, and these catalogs may be used as a starting point for further discussions.

Opportunities for Research

Research questions about the way we think and talk about the future might accompany questions about the efficacy of design fiction as a method of public engagement in science and technology. In the future of work prototyping activity, participants thought in nuanced ways about the use of their prototypes. They were able to pose questions and engage in discussions through the design of the prototype. Ethnographic observations of the design process will provide interesting material for analysis, as will the artifacts themselves. Additionally, individual and group interviews with participants about their creations may be framed as a part of the performative experience. For example, interviewers may play the role of reporters, asking designers about their work.



Figure 1