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Friends of the Library Excellence in Research Award: Process Paper

"Research Games in Structural Biology"

CHEM 361 – Bioanalytical Chemistry

At the heart of this project was a desire to investigate an unorthodox topic in unorthodox ways. I set out to understand research games in structural biology; their function, use, design, historical context, and limitations. Research games are unique in how they supersede not only traditional disciplinary boundaries but also concepts of data, researchers, audiences, and beneficiaries. I found myself at numerous junctures reevaluating the information I was gathering, its purpose, and its sources; I knew that I would be unable to use standard research procedures to fully understand this far-from-standard topic, and thus I broadened my gaze.

Research games revolve around new ways of and purposes for engaging the public in scientific inquiry. Someone playing these games is simultaneously a researcher and research subject, regardless of their familiarity with the field. Thus, it was obvious that peer-reviewed articles would fail to give a full and nuanced range of perspectives on research games. Even so, journal articles must form the backbone of any rigorous literature review in the natural sciences (though perhaps not for much longer if journals continue to fail to adapt to today's changing technological landscape– but that is another topic entirely). As such, I began my research with tools well known to any scientist: physical and electronic copies of journals and treatises as well as databases such as Web of Science, JSTOR, and SciFinder. Oberlin-specific tools further helped me on my way, including OBIS, the treasure trove of back-issue journals in the Science Library, and the Oberlin College Library website's "Summon" function.

Journal articles were obviously only one small facet of the network of communication springing up around research games, that of academics communicating with other academics; it was clear that non-peer-reviewed communication would be important as well. As I dug deeper, this picture became more nuanced. Present were not only researchers from a range of disciplines and members of the public with a variety of experience in formal scientific research, but also journalists, ethicists, game designers, and more. To access the communication that was occurring between these groups, I examined popular science magazines, blog posts, newspapers, lecture transcripts, online chatrooms, and the games themselves. Even something as seemingly mundane as Google took on importance as a tool with which to gauge the levels of public discourse on a subject. I cast a wide net with a fine mesh, drawing information from a huge variety of sources before cross-checking and verifying that information with other sources.

In the end, I became my own most important research tool: I played these games and became a member of the community myself. This participation opened crucial new doors, and it was my interactions with players and developers in-game which finally gave me the perspective to begin putting the pieces of the puzzle together. In today's academic world, the social sciences are finally beginning to move away from their historical emphasis on an unobtainable ideal of objectivity (for example, see Sarah Hankins' "Queer Relationships with Music and an Experimental Hermeneutics for Musical Meaning" [*Women & Music*, vol. 18, pp. 83-104] for a thoughtful analysis of this movement in

musicology). While the dogma of objectivity holds fast in most natural science research, this was a refreshing instance in which my own involvement and conscious subjectivity were important research tools.

Perhaps the greatest difficulty I encountered during this research process was the mutable nature of the games themselves. In fact, one of the three games on which I was focusing, Phylo, underwent a major revision during my research. While in many ways frustrating, this proved to be a valuable window into the minds of the developers and allowed me to witness the work that goes on behind the scenes – out of sight of the players and journals alike.

This project necessitated the creative use of a variety of research tools in a way that no other natural science project of mine ever has. I am thankful to my fellow CHEM 361 students for encouraging me, supporting me, and pulling me back when I dove too deep into any one rabbit hole, and especially to Professor Rebecca Whelan for her unending patience and guidance during this occasionally frustrating yet incredibly rewarding endeavor.