This is a pre-print version of the Timothy R. Amidon's webtext "Brightness Behind the Eyes: Rendering Firefighters' Literacies Visible" published in *Kairos: Rhetoric, Technology, Pedagogy*, 25(1), available at http://kairos.technorhetoric.net/25.1/inventio/amidon

Transcript of "Orderville Data Visualization Walkthrough" video

Hey y'all! This is the last of the screen recordings of the data visualizations that I'm going to show you. It's the most complex data visualization that I'm going to present, and it shows how easily and quickly visualizations can get out of hand if you're trying to manage representing how multiple people interact. But, I think that's also kind of the beauty—it shows the complexity in a way that could be overwhelming. It illustrates that there is so much intellectual and cognitive activity going on fire scenes—there is a great deal of communicative and mediational work that firefighters are performing as individuals and as teams. This visualization gets at that.

Here are a couple of key aspects of this visualization that I want to emphasize. In comparison to Chief Burke's data visualization, this Orderville visualization is based on observational data. And, it's based on as close to an activity as possible as the description of practice that Chief Burke described. This crew is working in a training setting to simulate the work they'd engage in at a structure fire. Chief Burke's visualization is based on interview data; this visualization is based on a set of observational data that includes video, images, audio recordings, and thermal imaging video recordings. From those data, I transcribed and coded data, as I walked through in the DataOps page. You can see some of the elements here that I've pointed out in earlier sections.

Let's start at the center of the visualization. I have the labels for the nodes turned on, and I think it's helpful to begin with this visualization with them visible. The center node of this visualization is PERSONNEL. From this node, we have three key actors or agents in this observational activity. We have the ENVIRONMENT, we have TEAM 2, and we have LT. LAMB. There is actually additional teams here, but to limit the complexity we've taken one team out. That team was in standby mode, so it doesn't take a lot away from what we can see crews doing. They are doing work even while they are in standby mode, and that's worth noting, but in order to simply this a bit I made that decision. So, again, we have LT LAMB, PERSONNEL, and ENVIRONMENT as the main segments in this visualization. I want to return to the DataOps page and talk through one of the moments you might have seen in those videos. You would have seen a crew crawling into a structure as they enter a basement. That's FF Ennis.

If we pull this node out here, we see that FF Ennis has their hand on the wall. They also, as they get up to the point where they are simulating that it's a mattress—it's actually a burn crate where they put burn materials in, but they pretend that the burn crates are mattresses at this training facility. Here we see FF Ennis crawl up and put his hands on the wall and begin to feel the burn crate and he starts tapping it. That's FF Ennis tapping it to simulate searching the mattress for a victim. Instructors sometimes hide rescue dummies on those, because firefighters will skip over those—so they are attempting to get firefighters to be thorough in their search practices. So you can see those practices from that video are represented here.

We can also see that FF Ennis is the firefighter responsible for managing the Team 2 radio communications. So, off of that, we can see that there is radio feedback, because his radio is too close to some other firefighters' radios. He's receiving and listening for radio messages, and he's also transmitting the personnel accountability report (PAR) for the crew. Recall back to that video again—one of the things that you might have noticed is that even though FF Ennis is responsible for radio communications for the crew, LT Lamb calls in and asks for a PAR check.

What we see is everyone on the crew stops and everybody is listening and there is a bit of a group discussion before they do anything. And what that crew noted that they were doing was attempting to piece together what LT Lamb had been asking for. So they got together, they closed space between each other, they hugged each other in, and they traded oral messages to make sense of what was the request that was made for information. Then, they figured that out; they identified what they wanted to say. You can see FF Ennis key the mic, you can hear the sound the mic makes when it is keyed, and you see Team 2 transmitting the message orally via radio. So that's just one part of practice within a larger element of practice, and you can clearly see the complexity of modal richness that firefighting literacies are comprised of.

Let's pull this segment away. In addition to the oral and aural-feedback, we have kinesthetic and tactile practices. We have different individuals responsible for performing different components of work practice to complete a search. We have distributed labor going on. We have FF Lynn is connected to Team 2 as well, and that firefighter is waving tools—using tools to span and cover space to ensure that no victims are present. We also see FF Larimore pointing; we see the team engaging in air monitoring, which is a cognitive practice, and the team is also engaging in a discussion. So, off of the Team 2 node we have a significant cluster of activity. We could walkthrough all of LT Lamb's activity, too. However, the point is that if compare this segment to the ENVIRONMENTAL segment, we don't see crew members pulling out texts and books and reading them and getting directions on how to their work.

As technical and professional communicators they are working in ways that are really different—they are certainly influenced by texts and alphabetic activity. It's not to say that texts or alphabetic literacies do not matter. Down here, off the ENVIRONMENT node, I've represented a number of the standards and texts like the National Incident Management System/Incident Command System that provide frameworks, which firefighters are practicing under. It's why there is an incident manager, and it's also why firefighters have tags that they've attached to LT Lamb's accountability board that represent these individual symbolically and metaphorically as they work. And, there are also these standards—promulgated by the National Fire Protection Agency—that pertain to the work that they do.

There are a lot more standards than the seven that I've selected to visualize here. But these are seven that are influence work in this particular scene. NFPA1403, for instance, dictates how to run a live-burn evaluation safely. It has information regarding what kinds of qualification that a firefighter needs to meet in order to work as a live-burn instructors. So in addition to the firefighters we see represented in Team 2, we have firefighters working as instructors under this framework and

ensuring that they meet the qualifications and that the burn is being conducted in a way that aligns with standards codified in NFPA1403.

So, you can see, even without folks pulling out those manuals that those documents and standards are impacting the work that is unfolding simply because the work mirrors the guidelines outlined in those texts. Finally, what also stands out is that the environment—the fire itself acts in a certain way. The superheated gases force the crews to crawl because it is too hot. The crews can feel the heat of those gases, so they are getting down low where it is cooler. The smoke outside tells Lt Lamb and offers Lt Lamb a piece of information that he can use to communicate with the crew. He can tell, based on the location of the smoke, where the fire is likely to be. At one point, Lt. Lamb makes a radio communication where he informs Team 2 to be aware that the conditions look like this from outside and this side of the building appears to have an intense fire load. So, Lt. Lamb is pointing interior crews spatially to a place where their risk may be elevated based on exterior information. Again, we see crews working in an distributed fashion where one individual is responsible for a component of activity, and then they use interface components like the radio or touch (depending on where they are in the distributed network of work) in order to do mediational and communicative activity.

When you think about it like that, it's pretty fascinating. When you have some time, consider clicking through the visualizations. That's what's there, and there's more complexity there for you to explore when you navigate through them. The last thing I'd like to show is viewing the page source. You can go to the actual visualization. If you go to view source, and you look for the iframe, you can go to source src = 'dataviz/burkeonscene.html' and click on that to see the script source. If you want to look at the data structure itself, this is a great way to do that. It's another way of visually understanding the data represented as nodes and links. This code uses source, target, and type, as the three elements of the visualization, and then it's really about how you connect those pieces to each other. For instance, we have the main Incident Management key branches in OBSERVE, PLAN, and COMMUNICATE. Off of those branches, I have segmented the nodes in an observing and information gathering segment; there is a monitoring crews segment. You can see—in the data structure itself—how elements connect. It offers another way of visually interacting with this data set and it's available for you to access and think through. I encourage you to look beyond the visualizations and click into the source content to see what's available, if you're interested in this.

Thanks again for your time!