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: Structure Fire Audio Description"

This is the audio transcript for the data visualization for the Orderville Fire Department. This dataset surrounded live fire training; it was observational data gathered during a simulated structure fire. The primary objectives that crews were engaging in were search and rescue and fire suppression. There are three main node branches from which the data is segmented. There is an environment segment; there is a team 2 segment; and there is a Lt. Lamb segment, who is acting as the incident commander. From environment, we have national standards which are written, alphanumeric, text based documents. These aren't physically at the scene. However, there are a number of these documents them that I have listed that influence practice at this training. These included NFPA 1000, NFPA 1002, NFPA 1021, which is the standard on officer qualifications, NFPA 1041, which is the standard on instructor qualifications, NFPA 1402, NFPA 1403 the live-fire training standard, and NFPA 1407. In addition, those written documents there are a set of SOG/SOPs, standard operating guidelines and standard operating procedures that influence practice at this location. There is also a cognitive framework that Lt Lamb and crews are working under known as NIMS/ICS the national incident management system/incident command structure. These frameworks are also operating in the background. These aspects are represented as alphanumeric modalities but they are also metacognitive and cognitive work because these practices are internalized understandings and interpretations of these documents—no one is taking these documents out to consult while they are working.

In addition, we have an apparatus and an ambient subsection in the environment segment. Within the apparatus subsection, we have Special Hazards 1 represented, the apparatus has lettering and numbering, which tells you the type of truck that it is and it is visual and alphanumeric. There is also a diesel engine running that can provide aural feedback, which can be very important for firefighters who know how to use it. For instance, a pump operator may hear a the engine RPMs go up and know that an engine crew may have opened their nozzle. They may know they have the pump in pressure mode, and know that the engine is now operating harder to maintain that pressure by ramping up the RPMs. There is gold leafing, which is a decorative and traditional aspect of the apparatus. They will also have gauges, for instance, the examples associated with the pump operator.

In the ambient subsection, we have radios which are aural and oral. We have tool use which is aural as well. We have fire which is tactile and visual—you see it and feel it; you can also smell it. We have smoke outside, which is visual and spatiotemporal, so you can look at

where smoke is and look at it as a cue to know where a fire is located. There is also fire as in heat, it is tactile. And super heated gases which are tactile and in some cases visual—for instance, if you are using a thermal imaging camera.

In the Lt Lamb-incident command segment, we have a number of tools that are a part of his practice. One that is significant is that there are a number mediational, non-communicative genres and practices that support his work. He's using tools and practices to gather information, not necessarily to communicate. For instance, as he's supervising the drill, and he's using his brainpower, experience, cognitive frameworks, and visual observations to keep an eye on what is going on. He's reading smoke, visually, and noting the spatiotemporal location of smoke; he's monitoring the scene visually and aurally—listening and looking at what is going on. He's seeing what crews are doing outside; he's monitoring his watch to see how long the crews inside or outside of the building have been doing what they have been assigned to accomplish. He's also keeping track of the crews inside, using oral and visual observation. He's also using his radio as a tool to manage and coordinate the incident. He's using his radio to communicate messages and receiving messages from crews. He's giving oral and aural messages; he's monitoring the radio listening to whatever activity is going on. If two crews are talking they might not be speaking directly to him, but he's going to listen in to get a sense of what's going on.

The third tool that is significant to this segment is the accountability board. Lt. Lamb is using that board to keep track of who is assigned to various crews and what task that crews have been assigned to complete. He has tags for each crew member on the board, and these alphanumeric and visual tools allow him to perform a specific meditational activity. Team 1 and Team 2 have tags on the board. There are three members in each of these teams, so for Team 1 there is a tag for FF Brodrick, Pff. Kehoe, and Pff. McGarrah. Team 2 tags are also connected to the board: FF Ennis, FF Larimore, and FF Lynn has their tag. Team 1 is on outside standby; whereas Team 2 is actively inside performing a search.

While Team 2 is performing a search, we see them using a range of mediational and communicative practices and tools. From team 2, we see FF Ennis, Larimore, and Lynn performing a search. They are managing their air, which is a metacognitive and visual practice. They are wearing PPE, which is tactie and visual. They engage in a team discussion which is aural and oral. From the Team 2 node, we have FF Ennis. FF Ennis is managing Team 2 radio communications—it's an oral communication. FF Ennis keys the mic, and there is an aural tone associated with keying the mic. There is a message that he sends orally, and there are also messages that he is receiving. There is also a radio feedback/interference sound represented because too many radios are in close proximity to one another. There is also a transmit PAR, represented. This is a genre that the team is going to use to respond to Lt. Lamb's call for a PAR check. The team will give a report to tell the Incident commander they are together, who is where, and how much air they have.

From FF Ennis, we can also see the tactile and kinesthetic work that the team is performing to navigate the space. FF Ennis has his hand to the wall; he also has his hand to a mattress at a point. FF Larimore is touching FF Ennis to keep the crew together, and FF Lynn is touching FF Larimore, as well. What they are doing with their free hand is using a tool to wave into the space ahead of them searching. If you visually consider this or mentally represent this in your mind, Ennis is on the wall; one person out from Ennis is Larimore who is touching Ennis' boot; and thereafter we have Lynn touching Larimore's boot. They are able to spread out, and then the two who aren't touching the wall are using their hand tools to gather information about the space. We also at one point we see FF Larimore pointing , engaging in gestural, kinesthetic communication at one point.

10:45 The final node we have in the Orderville visualization is the PPE/wearable segment. There is a number of components of equipment that the firefighters are wearing that have communicative or literacy elements to them worth noting. They helmet is visual and alphabetic. It has a shield that is also visual and alphabetic. We have SCBA that is self contained breathing apparatus that folks are wearing; it's visual and aural because it has alert tones. It's also visual and alphanumeric because there are gauges, letters, information, and warning labels. The turnout gear that the personnel are wearing also include alphanumeric information that can identify personnel. For instance, tail bibs include firefighters names or roll numbers on them. There are patches that can identify the department and/or company that a firefighter is assigned to. Other notable aspects of the gear are that the cleanliness and color of helmets and gear can signify various things: helmet cleanliness which is visual might tell you if a person has a lot of experience. The color of their shield might tell you that they are a line officer or a chief officer. Gold signifies chief officers, for instance. The helmet color itself—white helmets are worn by chiefs; black helmets are worn by line firefighters—sometimes officers wear black with white shields or sometimes they wear red or yellow helmets.

12:17 We have flashing lights which are visual; we have the heads up display which is a visual element of the SCBA. These are all elements of the SCBA that I am moving towards. We have chips which are an aural alarm. We have a low-air-level alarm that is tactile and aural, it begins to vibrate when the air is low it's also called a vibra-alert (or end of service time alarm). We have a reset sequence that is aural and a regulator that firefighters breath from that produce an aural sound when a firefighter takes a breath. You can also feel the regulator/breath, if you are wearing the SCBA mask. Additionally, there are gauges that tell you how much air is in the air cylinder which are visual and alphanumeric.

There's a lot going on here when we look at this from a literacy perspective. There's a number of tools and practices that are coordinated to actively and/or passively communicating or providing information to firefighters. What is really interesting about this visualization is that we can see that tools kind of do some work here even without folks

actively managing them. There's an algorithm here, for instance, that ensures that once an air cylinder reaches 33% it will signal the low air alarm and you won't be able to turn it off. It will inform you and others that you do not have hit the point where you need to leave the building because you do not have much air remaining. That's a really interesting thing to consider when we think about agency and who literacy unfolds in workplaces.