

# Sharing Food, Gathering Information: The Context and Visibility of Community Information Work in a Crisis Event

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## Abstract

This paper describes ICT use after a disaster, connecting the stories of various community responders and tracing their activities across sociotechnical networks. Drawing on contextual interviews and the digital record, we reveal how information work, food work, and emotional labor intersected. At the most superficial level, we find that many community responders continue to rely upon face-to-face communication and “real simple” technologies to coordinate their activities. This research also speaks to the visibility of community response work—offering a method for surfacing less visible work given the social complexities of a disaster. This approach provides a complementary perspective to research that relies solely on digital traces.

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## 1 Introduction

Concurrent with widespread adoption of information and communication technologies (ICTs), researchers have turned attention toward their use in disasters, spawning a genre of research known as crisis informatics (Hagar, 2010; Palen et al, 2010). Researchers initially noted how the ability to study crisis events through digital traces opens up new possibilities for understanding events and their responses, both formal and informal (Palen et al., 2010). Social media soon became sites of analysis for studies of informal response, with research often focusing on information sharing and interaction within a single site, including Twitter (Vieweg et al, 2010; Starbird & Palen, 2011), reddit (Leavitt & Clark, 2014; Tapia et al, 2014), Facebook (Palen et al, 2009; White et al, 2014) and Wikipedia (Keegan et al, 2013). Associated research on informal response has often focused on supporting new forms of work made possible by ICT (e.g. Palen et al., 2009; Starbird & Palen, 2011). A few studies have examined social media use within on-the-ground, community response efforts (Dailey & Starbird, 2014, White & Palen, 2015), but researchers are only beginning to attend to community responses that span multiple platforms (Dailey & Starbird, 2014) and to examine the intersection between offline community response and online volunteerism (White & Palen, 2015).

This paper describes ICT use within community response efforts after a tragic event, tracing response work across sociotechnical networks and provides in-depth analysis of the diverse tools and systems employed by various community responders. At the most superficial level, we find that many community responders continue to rely upon face-to-face communication and “real simple” technologies to coordinate their activities. We reveal how information, food provision and emotional labor intersect in interesting and important ways. This work also speaks to the visibility of community response work—offering a method for surfacing the less visible work given the social complexities of a disaster.

## 2 Background

### 2.1 Volunteer Work in the Context of Disaster Response

Recent research in philanthropic studies suggests that the relationship between volunteer work and formal organizations is a complicated one. For example, Volda et al. (2015) find that 72% of volunteer activities taken on by college students were not affiliated with or coordinated through an organization. When aid is channeled through volunteer-driven organizations, these organizations are said to be “shapeshifters” with “ill-defined” organizational boundaries (Volda, 2014). Some researchers prefer to sidestep the challenge of describing aid in relation to organizations, instead foregrounding “coordinated collective action” (Campbell, 2005), which can account for work taking place within organizations or outside of them.

In disasters, volunteer work occurs within, between and outside of organizations (Dynes, 1970; Fritz & Mathewson, 1957). Disaster work calls upon some to steadfastly maintain predefined roles

(Quarantelli, 1988), while others improvise to meet emergent demands. The scale of activity is another consideration. The sheer number of people and groups who converge in a disaster adds to coordination challenges (Fritz & Mathewson, 1957; Kendra & Wachtendorf, 2004). The intersections between these different kinds of work structures have been long been viewed as problematic by formal response organizations. For example, the first major study on convergence behavior in disasters took place upon request of the US military and characterizes convergence as a “problem of social control” (Fritz & Mathewson, 1957). Since that time, sociologists, and more recently crisis informatics researchers, have taken a more neutral stance on convergence (Palen, et. al., 2010; Tierney, et al., 2002). Addressing the tensions between informal, unofficial, volunteer, and community response (and their respective organizational approaches) with those of formal response motivates much work in the field (e.g. Harvard Humanitarian Initiative; Hughes & Palen, 2012).

## 2.2 Crisis Informatics and the Examination of ICT Use during Disaster Events

Increasingly, people (including emergency responders, affected members of the public and the global audience) are turning to ICTs, especially social media platforms, to seek and share information during disasters (e. g. Hughes & Palen, 2012) and to offer and coordinate assistance (e. g. Starbird & Palen, 2011). Given the complexity, diversity and scale of work in disasters, it should be no surprise that a genre of research, *crisis informatics*, has developed devoted to studying how information work occurs within them. Researchers in this emerging field have made good use in recent years of public digital records that can alternatively yield a rich and detailed picture of micro-interactions on a given digital platform and/or describe mass participation within digital platforms. Many of these studies focus on new forms of participation enabled through digital means such as “digital volunteerism” and “digital humanitarianism.” Many of these studies examine online convergence through the lens a single online platform (e.g. Vieweg et al., 2010; Starbird & Palen, 2011, Leavitt & Clark, 2014; Tapia et al., 2014; Keegan et al, 2013).

## 2.3 Using Digital Traces to Understand Disaster Communication

Given the practical and ethical challenges of collecting data in concurrence with the onset of a disaster, digital trace data has become a rich resource for empirical research on disasters. Yet, it is increasingly recognized that the public digital record is an imperfect lens for understanding disaster communication. Several epistemological and ontological critiques have been made of studies that exclusively explore a single digital platform. For example, not all digital platforms have been equally explored (Tufekci, 2014) and we do not understand enough about the user groups who populate specific platforms (Hargittai, 2015). In relation to the disaster content, further critiques have been made about what is discoverable from online sources. Particularly in terms of ICT use by the disaster-affected, the public digital record leaves a troubling gap. One-platform studies may be of limited value given that a single information activity in a disaster may be mediated through many different ICTs (Dailey & Starbird, 2014) or none at all. Burns (2014) finds that areas most affected by a disaster are least likely to leave digital traces, while Crawford and Finn (2014) raise the concern that those who leave digital traces are not necessarily representative of affected populations. Thus, while crisis informatics has made great gains in raising the visibility of digitally empowered crowd work in disasters, concurrent information work of those in affected communities remains potentially (and quite problematically) obscured.

As disaster scholars, we are concerned about the possibility that the most affected may be lost in the crowd. By tracing information work of those affected and responding to a tragic disaster in a relatively small community, this study helps to characterize the digital gap. Using contextual interviews *combined* with digital trace data we situate specific platforms within the overall information landscape that formed around a disaster. We uncover how work took place across several community-situated volunteer efforts. To account for the diversity of work arrangements that occurred, we focus our analysis on *chains of coordinated action*. Following a particular chain of coordinated activities, we can examine the interplay between actors who were organized and resourced in different ways and positioned differently relative to the affected community.

## 3 Event Background

On March 22, 2014, after a season of exceptionally heavy rain, approximately 8 million cubic meters of earth slid off one of the hills that line the Stillaguamish Valley in Washington State. The resulting landslide moved quickly and with tremendous force across a square kilometer of the valley, demolishing the rural enclave of Steelhead Haven, some 49 homes and cabins, and covering them in mud and debris. Tragically, 43 lives were lost. Volunteers and emergency responders rescued survivors. Recovery efforts continued for months.

The slide also buried hundreds of meters of the Valley's only thruway, State Highway 530. Because Highway 530 is the only road that traverses the Stillaguamish Valley, the slide cut off travel between the east and west, requiring those on the east side to make an 80-mile detour. This, divided response efforts into two sides and had an adverse economic impact on the town of Darrington (on the east side of the slide).

One primary activity for community response became feeding affected families, responders, and members of the nearest communities of Oso (population 180) and Darrington (population 1347) on either side of the slide. Among many spontaneous efforts, we follow the work of community-based collaborations that respectively operated on either side of the slide.

## 4 Methods

Through exploratory interviews and review of digital record of the event, we sought diverse examples of information work, spanning different kinds of ICT platforms and different sets of actors. We then identified and interviewed individuals involved in these activities, including government employees, community responders and volunteers, affected family members, remote volunteers, and media. These interviews revealed additional activities of interest and additional interviewees. This paper draws on interviews with 25 people. All took place nine to thirteen months after the event. The first two authors conducted all but one interview jointly, and with one exception (a remote volunteer) all interviews were conducted in-person. Using a semi-structured protocol, we probed for details on the information behaviors and practices pertaining to the personal actions and perceptions of interviewees during the event. To improve accuracy of self-reported information and to improve depth of detail, the interviews were conducted contextually (Holtzblatt & Beyer, 1993) in the location where the interviewee conducted their information work during the event. 22 interviewees consented to interviews in their workplace, volunteer location or homes. In many cases, we were given access to personal records (digital and analog) within tools of the event such as notebooks, photos, Facebook pages, and website administration pages. At the conclusion of the interview, we prompted interviewees with a comprehensive survey of information tools and resources they may have used.

This study also relied on the digital record of online information sharing respective to this event. In exploratory analysis, we looked at all prominent information platforms (websites of national and regional media, Facebook, Twitter, Reddit, Wikipedia, government websites, et al) to get a feel for the overall information landscape. We then explore specific digital record for observational data. Aligned with Geiger and Ribes' trace ethnography approach (2011), we also used the digital record to identify actors who played a particular role in information sharing during the event, including potential interviewees. We then use the digital record to contextualize and affirm (or disconfirm) interviewees' statements and to elaborate on what we learn from interviewees.

Researchers met regularly to analyze findings. We identified salient themes inductively through memoing and affinity diagramming (Miles, Huberman, & Saldaña, 2013). We inductively grouped interviewees and those with whom they coordinated their activities into *networks of coordinated action*. Each network of coordinated action became an object for analysis in which we could then examine what human, social, and technical infrastructures came into play in supporting the activities engaged in by the network. Though other researchers have reported on convergence around food in a disaster context (Kendra & Wachtendorf, 2004), we were surprised when several of our initial interviewees—including Public Information Officers, an affected family member, and several community volunteers—independently connected food work with information work. This encouraged us to seek out additional interviewees and to review the digital record respective to these intersecting themes. For this paper, we spotlight three networks of coordinated action. Each was involved in the collection, preparation, and/or distribution of food after the emergency. To compare incident-focused communication to day-to-day communication we used the digital record and participant observation. Two researchers spent a total of three days each at two sites featured in this paper (Sedro Wooley Distribution Center and a Funeral Dinner Committee event).

## 5 Findings

### 5.1 Feeding the Community: "It's Just What We Do"

As news of the slide spread throughout the community, and (according to those we interviewed) without any instruction from anyone, community members throughout Darrington just started cooking. For Shiela Ashe, co-owner of the local grocery store (the IGA), this meant making sandwiches and sack lunches for responders. She began "immediately" after hearing of the slide and continued for "weeks and weeks."

After delivering sandwiches to the fire house—something she had never done before—she made her way to the Community Center to touch base with the “funeral dinner ladies”. For a month following the slide, a diffuse set of community members, volunteers and aid workers worked together at the Darrington Community Center to serve free meals, twice a day. Professional and volunteer responders sat side-by-side to eat with aid workers, community members, and even media. In explaining this mass production of meals, Ashe said, “That’s just what Darrington does.”

#### 5.1.1 Leveraging Existing Social & Organizational Infrastructures

Dana Cannon (pseudonym) a community member who lost loved ones in the slide, stated it this way: *We have an infrastructure in this town called the Funeral Dinner Committee. They’re a bunch of ladies... if something bad happens they get together.*

In responding to the horrific and catastrophic event, community members in Darrington began to do what they knew best, what they always do—to prepare and serve food to those affected. The work utilized existing physical infrastructures such as the facilities of the Community Center, which already served as a location for preparing food and accommodating people during times of mourning. It also leveraged existing social infrastructures, including informal community norms and practices around food sharing as well as the structure of established “organizations” like the Funeral Dinner Committee.

The Funeral Dinner Committee (or Funeral Committee as it is alternatively called) has been active in Darrington since 1950, offering a memorial dinner for anyone who passes away in the Stillaguamish Valley. One of its founders, “the funeral lady” Janet Cabe, is still in leadership. Memorial dinners take place in the Community Center, which was built a few years after the Committee formed. There are 150 seats in the Center’s dining room, and most dinners are attended at capacity. Funeral Committee members arrange the dinner, local high school students set up the tables, and community members provide the dishes potluck style.

In terms of internal coordination, the Funeral Committee is formally activated by a phone tree. Cabe lives across the street from the Community Center, and people regularly drop by her home to communicate with her face-to-face. To communicate with the broader community about a dinner, the family of the deceased typically places an event notice in a regional newspaper, the Everett Herald.

Membership in the Funeral Committee is quite diffuse. When asked how many members they have, one person said 19, referring to those who attend meetings. Another said 60, referring to those currently active in the phone tree. But, when asked who brought food for the dinners, Cabe responded, *“Just about everybody over a certain age has cooked for us.”*

The Funeral Committee’s activities are highly visible within the community of Darrington— all of the interviewees we talked to from the eastern side of the slide mentioned the committee. These factors, combined with the decades of continuity for this practice, may explain why so many community members independently and spontaneously brought food to community center on the day of the slide. Cabe explained: *“[and on the day of the slide] no one had to be told to bring food to the community center.”*

Multiple interviewees—including Ashe at the IGA and **Catherine Lyons, the owner of the town’s only pizza place**—described how they began to cook immediately after the slide. Though these individuals were not formal members of the Funeral Committee, their work eventually converged with the Committee’s efforts to feed people at the Community Center. Through a combination of established and emergent collaborations, the Darrington community quickly established a practice of serving three meals a day to “the community at-large.” As increasing numbers of people converged on the town, it became hard for the community members to meet the demand. After a few days, the Red Cross contracted an outside organization to cook. The Funeral Dinner Committee continued to be a presence at the Community Center, serving coffee and laying out some dishes provided by community members.

#### 5.1.2 Physical Convergence of Food and Information

Serving meals at the community center was integral to how information was shared by those in Darrington. In contrast to the shelter on west side of the slide, which was restricted to displaced persons, the Darrington Community Center was a point of convergence for all in Darrington. For the first six nights after the slide, responders, officials, and community members gathered for meals at the center. This was followed by a community meeting at 7pm that often lasted until 10pm. Meetings continued several times a week for about a month. Meals were served every day. Diane Boyd, who is the long time director of the Community Center (a volunteer position, she is also the school librarian) explained, “everybody came here for information.” Thus the Community Center became a place for formal convergence, including town meetings run by officials, and informal convergence, such as community meals. This aided the flow of information in all directions. Though the focus of these efforts was on supporting the community, even members of the media were allowed in, provided they left their cameras and recording equipment outside.

Because the Community Center (and its meals) were open to community responders, FEMA officials, the National Guard, media, town people, contractors, affected families and others, the Community Center became an optimal location for face-to-face information sharing.

Another site interviewees recalled as an important location for getting information in Darrington was the IGA, another food hub. Inside, cashiers and signs at check-out stations updated people on information—e.g. the day and time of the next community meeting. Outside in the parking lot were two 4x8 bulletin boards. At the end of each day, official information was posted and people would gather around to get the latest. Community members posted their own messages there as well. For example, condolence messages and tributes to the victims were shared. Interviewees suggested that the boards were also just places to hang out, where people would congregate and talk. Just as community members reported relying on the boards, media also converged en masse in the IGA parking lot. Even formal responders relied on the IGA as an information outlet. A public information officer (PIO), Kris Rietmann, who worked in Darrington during the first week, explained how the IGA's dual roles as information hub and food hub were related:

*"It's kind of a clearing house for info 'cause it's the grocery store. So I'd send it to the owners [...] People in Oso and Darrington like the actual boards where you put up the old school lettering. We would put up stuff on that, make sure that they had the flyers, [...] 'cause those are just kind of the places where people went."*

As Rietmann explains, PIOs produced flyers electronically then forwarded them to individuals near the bulletin boards who could print and post them. Community members reported sometimes taking photos of these flyers and circulating them through Facebook.

IGA employees and owners were also viewed as an important informational resource, a role they fulfilled primarily through face-to-face interactions. By communicating with a volunteer of a Facebook news group that was widely relied on by those in the affected area, Ashe indirectly became a "big resource" for keeping the online community abreast of the situation in Darrington as well.

### 5.1.3 The (In)Visibility of Community-Based Social Infrastructure

The two physical infrastructures where people converged for information in Darrington left distinct digital footprints behind. Online, the Funeral Dinner Committee has a low profile, with no website of its own or social media accounts. Only a handful of references appear in a web search. And, though the slide received widespread media coverage, the Funeral Committee, though clearly central to the community response to the event, received limited attention in the regional and national press.

On the other hand, digital traces from the event leave a record of the IGA as a key information hub. According to a news report from a major Seattle-area media outlet, "The IGA was a hub during the Oso landslide, acting as a center for information and donations, as well as providing free food and water for rescue workers. Employees even took time off to help in the search and rescue effort" (Wilkinson, 2014). And several tweets acknowledge the IGA as an information hub—e.g. this one from a journalist in the region:

*(2014-03-25 12:48pm PDT) @lindsaycohen: The Darrington IGA remains a focal point for the community, for people to check in, show support, get info. #530slide <http://t.co/nlYx2PbWZO>*

### 5.1.4 Summary of 5.1

The seemingly spontaneous work of preparing food in this community was shaped by long-standing community practices. Implicit knowledge of community norms reduced explicit coordination and information work around preparing food, perhaps contributing to less visibility in digital trace data. Yet, the sites of this work became important information grounds for staging information work within both formal and informal response. These information grounds were an expression of the value the community placed on gathering all social types together in the same physical spaces.

## 5.2 Supplying the Community: The Darrington Food Bank

Another volunteer-driven community organization that mobilized to meet emergent needs after the slide was the Darrington Food Bank. Each week the food bank distributes free food to under-resourced people, typically serving about 30% of households (considerably higher than the national average of 14% (Borger et al, 2014)). In the weeks after the slide, when round-trip commutes to work and school were four hours longer, increased costs of gas and childcare drove a surge in demand, and some 65% percent of homes in the district sought relief at the food bank. In addition to meeting this increased demand, food bank

volunteers also arranged the collection and distribution of literally tons of food for the meals at the Community Center, dropped off groceries at the doorstep of those who lost loved ones, and brought needed supplies in for responders. They extended their typical capacity to meet these new demands by drawing on the capabilities of the regional “food bank network” and by collaborating with “key individuals” at the Darrington Community Center, the Fire House and other locations.

### 5.2.1 Leveraging the Regional Food Bank Network

The food distribution system for the needy in the U.S. is a complex web of independent charities each staffed and resourced differently. Donations may come from businesses, individuals, government or other non-profits. Larger organizations may have paid staff, but many, like Darrington’s, are all-volunteer. Collection and distribution of food in this network is not one-directional, nor are the chains of distribution static. For example, the Darrington Food Bank is an “unofficial distribution center,” regularly supplying two other rural food banks.

In the hours after the slide, the lead volunteer at the food bank, Catherine Lyons, recognized two things: 1) the closure of Highway 530 would cause increased demand at the food bank, and 2) it would disrupt arrival of food into town. She called Cole Bitzenburg, the coordinator at the Skagit Distribution Center—the most “geographically logical” food bank distribution center—and made a request for “a lot of food right away.” Through emails and phone calls, Bitzenburg activated the regional food network, some of whom regularly support the Darrington Food Bank, and many more who do not. Through his coordination, dozens of charities in the region provided logistical support including transport and “staging areas” for food distribution as well as provisioning donations for Darrington. As Lyons explained: “Tap into the food network then you’ve got a whole lot of people to distribute the work across the community.” By the end of the first week the network had brought in half a dozen trucks and two semi-trailers of food and other supplies.

### 5.2.2 Dropping Off Food, Collecting Information

For three days after the slide, phone lines were down. Likely due to congestion, cell service was also not always reliable. The Darrington Food Bank did much of its communication work face-to-face. Somewhat surprisingly, we were told that even if phone lines were intact, face-to-face communication would have remained the modus operandi for the food bank. Even in its day-to-day communication, the food bank employs very little technology and in spite of its surge of activity after the slide, that remained the case. In terms of personal use, Lyons has a laptop and tablet, but she prefers to coordinate with the food bank’s 20 volunteers by phone or in person. Though she uses email, she stated that after the slide she had no time to look at email or other online resources.

During the slide response, Lyons used her pizza shop for food bank business and off-loaded phone communication to a volunteer who worked the phone there. She appointed another volunteer to collect information at the food bank. This freed her up to make “rounds” in person about three times a day to the Community Center, the fire house, the food bank and several other locations: “*I sort of had this unofficial route, so I checked in on anybody who would be needing food at that time.*” At each location she sought out specific individuals who could reliably relay the information she needed without giving her information overload:

*The way it was set up, I would have probably set it up that way anyway [...] with key people in certain spots. Because I knew they would filter it, all the information, and only give me what I needed. And I could trust them to do that, instead of [...] going on Facebook and [reading] 50 posts and only one’s something that’s of any value....*

Lyons viewed face-to-face communication with “key people” as a more efficient means of understanding community needs than going through platforms like Facebook. This preference for “legacy” communication methods extends to other groups in the food bank network. Describing how they coordinate with volunteers from the various food banks that rely on their services, an interviewee at the Skagit Distribution Center explained:

*They are not all great with email. Some aren’t great with technology. Others have problems with computers breaking down, etcetera. Only three or four of the 19 [food banks] could you reliably communicate primarily through email.*

Instead, most communication with the food banks takes place in-person when they arrive for their weekly pick up. Coordination between the distribution centers and larger organizations that support these food banks occurs through other channels. These supporting organizations regularly correspond via email and many use the same online ordering system. To support the slide response, these supporting

organizations used email and conference calls to coordinate with each other. Though, we were told, the online ordering system was circumvented. During the event response, Lyons relayed requests in person to Bitzenburg during daily delivery. He then phoned or emailed the request to the major regional food bank supplier.

### 5.2.3 Summary of 5.2

Food distribution occurred through *chains of coordinated action* that took advantage of an established emergency food distribution network. Because the network is decentralized, information work was decentralized. Though the whole regional network was activated, individuals associated with specific nodes communicated directly with “key” actors through email, phone, and face-to-face. These actors were cognizant of working within “the food bank network.” Yet, some groups in the network publicized their work (often naming their direct collaborators in the network) on websites or Facebook. Others did not. Thus digital traces give an incomplete account of the coordination that took place through the network.

## 5.3 Feeding the Responders: The Soup Ladies

We first learned of the “Soup Ladies” in an interview with a PIO for the US Geological Survey (USGS) of Washington State, John Clemens who worked on the side of the slide opposite from Darrington. Like many responders on the western side of the slide, USGS geologists had partaken in several meals provided by the Soup Ladies, an organization that provides mobile meals to responders of major crisis events. Regular deliveries of free “home-made” hot soup made an impression on those working long hours in cold rain and mud. During the event, Clemens tweeted (from @USGS\_WA) his appreciation, mistakenly attributing their efforts to “caring Oso residents.” However, the Soup Ladies were actually not from Oso, but from Black Diamond, two hours south.

Founded in 2005, the Soup Ladies is a 60 member volunteer organization focused on feeding first responders. Based out of a restaurant owned by its lead volunteer, Ginger Passarelli, the group has a mobile kitchen for traveling to any extended emergency response. They have the capacity to feed up to 600 people every 90 minutes from their mobile kitchen. They are regularly called to crisis incidents around the area, and occasionally mobilize to disaster-affected areas outside the state. Like other response organizations, Soup Ladies arranges their work in order to respond quickly: “*When they call us, we can be out the door within an hour with food for 100 or more people.*”

Unlike the Funeral Dinner Committee, Soup Lady meals are not open to the entire community. They focus solely on feeding responders at events. This does, however, include community members who are not part of official response organizations but are helping during an event. Along with several rural fire departments and King County Search and Rescue, Soup Ladies are one among many all-volunteer organizations that deployed to the slide. The group may be considered a specialized kind of emergency response organization, as all Soup Ladies (and Stew Dudes, as male volunteers are known) are trained and certified in the National Incident Management System (NIMS). All undergo background checks.

### 5.3.1 Leveraging Existing Social & Organizational Infrastructures

Though when mobilized under the hat of Soup Ladies, they are “Soup Ladies first,” many volunteers—including Passarelli—have overlapping memberships in other emergency response organizations in the region, including additional certifications and training. Several volunteers also have day jobs in formal response, including some police officers and firefighters.

Similar to the other community response efforts described above, to communicate among volunteers and to coordinate with other emergency responders, the Soup Ladies employ communications tools and practices that Passarelli describes as “real simple and real precise.” When volunteers of King County Search and Rescue got the text to mobilize to the slide, Passarelli also received it. Following incident management procedures, she contacted the Emergency Operation Center by phone and offered assistance. She then quickly rounded up her Soup Ladies through text and email chains, prepared food, and drove to the Arlington Fire Department, where they fed fire fighters working on the western side of the slide. Understanding the event’s magnitude, Passarelli reached out to a fellow police chaplain, and got access to a kitchen at a local church, eventually preparing 6,655 meals over 16 days. However, being two hours north of their home base, it soon became apparent that they needed more help. Because Soup Ladies fed responders at the recovery site (a restricted area), they were limited in who they could accept as volunteers. An emailed call-to-action circulated to members of the Behind the Badge Foundation enabled the Soup Ladies to get volunteers with established emergency response ties who lived closer to the slide.

### 5.3.2 Distributing Food and Information

Twice a day the Soup Ladies packed up their truck and headed northeast to the slide. Along the way, they would make six stops where they would serve all the responders in the area. At each stop, responders would stand in a circle near the truck, eating and talking. When Passarelli was asked by another Soup Lady why they did this, she responded:

*We're making the dining room table. That's what brings people together is food. The dining room table is like an altar. [...] You're providing them with a place to communicate and be together.*

While serving meals, the Soup Ladies coordinated in person with the command about the next meal service, working out such details as the best time to serve given the projected work flow and number of meals. Collecting plates and garbage became an opportunity to have one-on-one conversations with responders about their needs. In this way, Soup Ladies were able to provide personalized service to individual responders, provisioning specific requested food and drink to workers as well as sundries like sanitary napkins and pain relievers.

### 5.3.3 Communicating on behalf of the Formal Response Community

The Soup Ladies worked directly with emergency responders on the western side of the slide within the chain of command established by the response. In contrast to the other community response efforts described, this positioned them to give a public face to the formal response effort. In keeping with the official incident management procedures, Passarelli only granted media interviews that were approved by the PIOs working the event. Talking points were discussed with the PIOs in advance. This yielded several stories from local and regional press and at least one spot on national TV. Beyond media coverage, the Soup Ladies maintain an online public presence that spans multiple platforms. They have a website which provides basic information about the group, but contains only ten blog entries posted between 2009 and 2014. The @SoupLadies Twitter account has just 85 tweets since 2009. The 195 accounts they follow and their 234 followers appear to be a fairly tight network of their own volunteers, local responders, and response organizations along with a handful of media organizations. They are most publicly active on Facebook with 4654 likes and 463 posts since 2009. Posts include event announcements, photos of the group, shares of news articles, calls-to-action and occasional invitations to donate. While their social media is publicly accessible, those interacting with Soup Ladies via social media, the followers and followed, the posts and comments are largely comprised of regional emergency response workers and their supporters.

### 5.3.4 Summary of 5.3

Though geographically and therefore socially separated from the community response efforts described in 5.1 and 5.2, the coordination work of the Soup Ladies shares similarities with those other efforts. Information work for coordination occurs through “real simple” means. Likewise the cite of prepared meals became important information grounds intended to provide both sustenance and emotional support. The information work represented in Soup Ladies public trace data represents is distinctly different than the communication work they staged around the meals they served.

## 6 Discussion and Conclusion

We traced community efforts after a disaster, connecting the work of responders across sociotechnical networks. While focusing on food, these particular efforts set a context for in-person information spaces that the community and responders valued. More superficially, many community responders continue to rely upon face-to-face and “real simple” technologies to coordinate their activities.. This work also offers a method for surfacing the less visible information work that takes place within the social complexity of a disaster, thus helping to account for potential biases from focusing solely on digital traces.

### 6.1 Examining Community Response Work through Networks of Coordinated Action

We have demonstrated how coordinated work in this disaster took place within, across, *and* between organizations. The coordinated activities we have described included the spontaneous actions of individuals *and* the planned activities of groups. Improvised work was shaped by existing social infrastructures and practices including community traditions that leave little trace. Further, each coordinated activity took place through a distinct constellation of ICTs. We were able to account for these complex arrangements by tracing the path of work through *networks of coordinated action*. Analyzing networks of coordinated action can account for the fluid and multi-sited nature of how work—including information work—occurs in disasters. By integrating multiple strands of evidence, primarily overlapping



contextual interviews *combined with* analysis of the public digital record, we were able to document how information work occurred within each of the efforts as well as how each effort contributed to and is represented in the public digital record. In this manner, we were able to provide an empirical account of the placement of ICTs *within* a rural community's response to a tragic event. We thereby help to situate ICT use within actual practices and demote any specific technology or platform from the *site* of research to one *tool* among many, used by people. Therefore, this research complements and extends the many recent studies that primarily make use of the public digital record, especially those that focus solely on single platforms.

## 6.2 ICT Use by Community Responders: Focus on “Real Simple” Tools

Although the digital record of this event is overall a rich one, spanning many online platforms including traditional and social media, government and non-profit websites, a common feature of networks of coordinated action who took on the community response food work is that each of these efforts relied very little on online public platforms for their coordination work. Several among them preferred face-to-face communication; phone and email were also used to some extent. Far from viewing themselves as communication have-nots, this limited palette of “real simple” tools was considered an asset. It helped curb information overload and was viewed as more reliable in the context of a disaster. It also assured that volunteers and organizations with less technical expertise were not excluded from the response.

## 6.3 Food Work and Information Grounds

We began this research by trying to understand the information needs and behaviors of individuals affected by a disaster. Consistently, interviewees linked their personal information work to the larger social context in which they worked. In this case, interviewees connected “information foraging” (Pirolli & Card, 1999) to a more literal form of foraging that took place at the sites where community-based actors offered food. The community center, grocery store, and even the temporary “dining table” responders arranged themselves into at the recovery site were all viewed as important vectors for information sharing and communication. Official information, condolences, and messages of hope were posted on bulletin boards outside of the IGA (the town's grocery store), drawing people each day to see the new posts. Photos of flyers posted at physical locations like the IGA circulated through social media, and in some cases individuals near these physical places were encouraged to print flyers created and shared electronically and to post them at these sites, essentially cross-posting (White et al, 2014) or bridging technological gaps in the information space (Dailey & Starbird, 2014). The food-oriented “information grounds” (Fisher & Naumer, 2006) at the Darrington Community Center and IGA parking lot were sites of both formal and informal information sharing across multiple “social types” (Ibid.): affected family members, community members, responders, volunteers, and the media. These sites supported more fluid multilateral communication across social types than would have been possible without them. It is important to note that this open arrangement to different social types within a single convening space is something that the local community actively strove to create (according to those we interviewed). In other disasters, information grounds may remain more segmented, for example, with convening places only open to responders or only open to displaced persons, etc.

These food-oriented information grounds were gathering points that fostered face-to-face communication, enabling people to congregate and talk, something our interviewees valued. Response work is accompanied by a high degree of emotional labor (Mastracci et al, 2014). While pragmatically, as one interviewee put it, “everybody needs to eat,” the efforts we describe were shaped with an intention of expressing emotional support—e.g. not just giving food, but giving “home-cooked” “comfort food”. The needs of individuals were addressed through personalized service such as door-step deliveries to affected families. Perhaps confirming the success of the food-related efforts in manifesting their intention to comfort, multiple interviewees brought up food-related locations and the food-related activities led by others as personally important to them. It was in this sensitive and responsive context that information was meaningfully shared by the several social types who occupied these spaces,.

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