Collaboration Resilience in a Conflict Zone:

Social Capital and Community Formation

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In recent years the HCI and CSCW communities have begun to take a strong interest in emergency and citizen response to disasters. In this paper I will focus on citizen response to disasters, and in particular, how people use information technology to be resilient when their environment is severely disrupted. I will describe the nature of community and a related concept, social capital, for people experiencing disruptive environments.

The definition of social capital that I draw on is from Bordieu who describes it as "*the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition*" [1, pg. 249]. In this sense, social capital exists through relationships. Citizens who respond to crises are empowered when they can tap existing relationships and forge new bonds with other survivors.

Pontes [7] describes how social capital represents the ability of individuals to receive benefits of membership through a social structure. In disasters, people often are geographically separated, as it is difficult, or even dangerous, to travel. Communities are invaluable to people in such circumstances, in providing emotional support, enabling people to secure resources, and for coordination to achieve safe travel, or to carry on work. The problem however, is that community during disasters does not exist in the same way as it does in normal environments. It is unsafe and dangerous to travel to meet others. Community can, though, be formed online.

Since 2006 I have been studying how people can be resilient in conflict zones, i.e. when they are experiencing a war. My students and I have been collecting archival Internet data and interviewing citizens who experienced the Iraqi Gulf War (since 2003), and the Israeli-Lebanon conflict in 2006. We found that people use a variety of technologies to be resilient: cell phones, emails, Internet chat forums, social networking sites, and blogs. In this paper I will focus on how Iraqi citizens, through blogs, have created communities that help them transition to recovery after experiencing a severe disruption.

I frame the analysis of blog use during disruption using Hoffman's [3] model of stages of recovery in a disaster. In disasters, people lose access to physical places that have important social meanings: religious institutions, public buildings, public squares, as well as people's homes. These places offer people a sense of community and identity [3]. Environmental disruptions (disasters and war) often make it impossible for people to collocate in such places as they must relocate or are unable to leave their homes.

In Hoffman's first stage of recovery from disaster, people experience an extreme sense of isolation. As survivors of an environmental disruption, their social fabric has often dissolved. They may be physically cut off from others, as with Hurricane Katrina survivors who often had to wait days for rescue boats.

In the second stage of recovery of disaster, people find others and form into groups. People realize that what they have in common is that they have survived, which Hoffman describes as leading to bonding and a sense of unity. Collocation with others provides a means for this bonding activity to occur. Collocating may be fairly soon after the disaster struck, e.g. as in relocating to a school during the Oakland firestorm [3] or in the New Orleans Superdome stadium after Katrina. People can also continue to meet with others once the acute stage of disaster is over. It is in this second stage of recovery that people begin rebuilding their lives and reconstructing their social scaffolding. People who sustain supportive social relationships have been found to be more resilient during disaster [5].

New identities emerge in this second stage—that of survivors. Eight years after the event, survivors of 9/11 have formed the World Trade Center Survivors network (http://www.survivorsnet.org/) which is still active and often involves activities where people physically meet, e.g. at local New York restaurants. Hoffman describes how survivors of the 1991 Oakland firestorm formed a community of survivors who convened convocations, and met regularly at burn sites [3].

In the third stage of recovery, survivors either return to their homes or are settled in new areas and the disaster effects no longer predominate. In the case of Iraq, this passage to closure has not yet happened, as disruption is still occurring and the environment is still dangerous to residents.

Contrary to disasters, wars, as in Iraq and Israel, involve continual disruption. People must continually rebuild and recover from traumatic events such as effects of bombs, shootings or kidnappings, uprooting to another area, or loss of life of friends and family. Thus, this second stage, where relationships and communities are built, is especially important during war to provide resilience for when the next calamity occurs.

Button [2] describes how disasters are socially constructed. Different groups and individuals compete for their worldview of the disaster to be heard. With blogs, people can easily broadcast their view of the disaster, providing an alternative to official news sources and government views of the condition.

Table I contrasts disaster recovery in physical collocation with how affordances of blogs can support recovery. First, in Hoffman's model, people collocate with others as part of the recovery process. In a dangerous environment, it is difficult or impossible to meet with others. The anonymity of blogs enables bloggers to express themselves and interact in a *safe*, virtual environment. People can form online communities with blogs by linking to other blogs and to blog content. People can express identities (e.g. as a Shia or atheist) that would ordinarily be dangerous in a volatile environment. The use of comments enables bloggers to receive support from users, within and outside their region of conflict. Last, users control content, and the narrative structure of blogs enable users to express their viewpoints with others about the environment as a diary or running commentary over days, in reverse chronological order. This is in contrast to other social

media such as Twitter which have limits on character length. In contrast to chat rooms, individuals can provide a longer narrative thread over days so that the reader can follow the story, e.g. to describe event details or express catharsis [4].

Stage II recovery aspects (Hoffman)	Characteristics of physical war zone	Affordances of blogs that can support recovery
Survivors meet physically	Unsafe to travel to meet others	Can interact in a safe virtual environment via anonymity
Survivors form a community	Cannot interact physically with strangers (can be insurgents)	Can form online communities by linking to other blogs, content
Survivors form new identity	Can be dangerous to reveal identity (e.g. member of a religious sect)	Can manage identity, develop new identities, online
Survivor group become a support system	Support system can not be reached through collocation	Can receive comments of support globally
Can engage in dialogue of tragedy to others collocated	Can be dangerous to express ideas in public	Can express ideas of tragedy globally through narrative structure

Table I. Contrast of collocation and blog affordances in Hoffman's second stage of disaster recovery.

We have begun to study the effects of blogging on citizen communities in Iraq and are finding support for our model outlined in Table 1. For example, we discovered that bloggers receive support globally from others who have experienced wars, extending the reach of their community beyond their geographical borders. We also found that through blogs, people create new identities where they can express aspects of their personalities, e.g. as atheists, or as journalists with particular political slants, without fear of reprisal. We also found that people engage in dialogue about the war, as a form of catharsis, which helps them cope and transition to recovery. Clearly more research is needed to address a number of fundamental questions regarding social capital and community formation and response during an environmental disruption.

Some questions that arise that relate to social capital and disaster response:

1. How can participation be increased by citizens to self-organize and form online communities that can provide support and resources during environmental disruption?
2. What features of communities facilitate action in conditions of environmental disruption? E.g. in a disrupted society where trust has eroded, might trust within an online community take on increased importance?
3. What is the nature of the resources that the community generates that can help people be resilient during an environmental disruption?

4. What are negative consequences of the social capital in communities formed during environmental disruption? E.g., are there excess claims on group members or might individuals be inhibited by the group from taking action?
5. Might there be benefits in the strength of weak ties for people experiencing environmental disruption? E.g., perhaps weak ties are more effective for securing resources because strong ties lead to redundant ends?
6. What technologies are best suited for interaction, providing emotional support, forming identity, and engaging in dialogue, during an environmental disruption? Might different technologies work better for different types of support?
7. What technologies are best suited for coordination during environmental disruption, e.g. for organizing safe travel, for locating material resources, for finding health care, etc.?

These questions are not unique for situations of environmental disruption but apply to many varieties of communities. I hope that we can collectively discuss these questions at the workshop.

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