

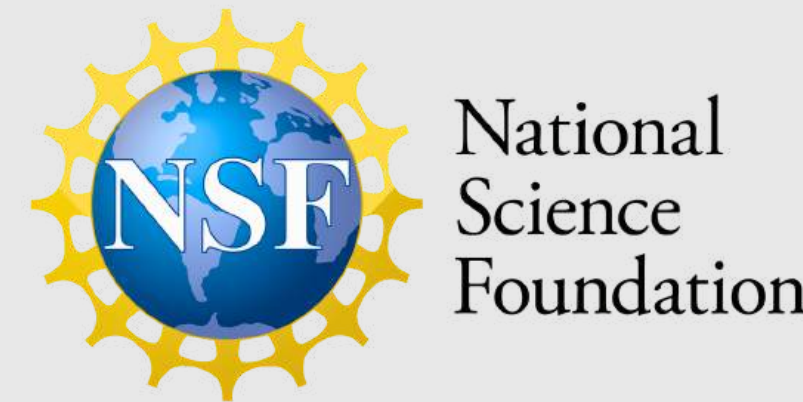
Challenges and Opportunities in Incorporating Volunteers in Flood Rescue Operations: Perspectives of Emergency Managers (EMs)



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Introduction

Introduction:

Coordination of volunteer convergence, especially spontaneous volunteers, is a known challenge for emergency management (EM). While previous studies focus on volunteer motivation and volunteer management challenges across all disaster response tasks, we focus on volunteer search and rescue (SAR) coordination. Volunteer assistance in SAR is particularly undervalued and underutilized due to coordination, liability, and capacity challenges. Yet, with increasing disaster frequency and impacts, local volunteer resources must be systematically integrated into formal emergency SAR protocols to support growing needs.

We advance volunteer convergence research by describing emergency managers' perspectives on working with SAR volunteers and groups. The goal is to support EM in harnessing spontaneous disaster volunteers as strategic, long-term partners rather than temporary assets.

Research Question:

What are the challenges and opportunities observed by emergency manager's (EMs) in incorporating spontaneous volunteers or volunteer teams in flood SAR operations?

Methodology

Data Collection:

- Semi-structured interviews with 26 emergency managers (EMs) who worked with volunteers during flood rescue operations.
- EMs operating in areas impacted by Hurricanes Harvey (2017), Irma (2017), Florence (2018), Ida (2021), and Tropical Storm Imelda (2019) (see Table 1). All county and city EMs in areas affected by these disasters were identified and contacted for interviews. Snowball sampling expanded the sample. Data collection occurred from 2018-2022, and continued until data saturation was reached.

Table 1. Locations of Emergency Managers Interviewed

Louisiana		Texas		Florida	North Carolina	
Parishes	Cities	Counties	Cities	Cities	Counties	Cities
East Baton Rouge, Terrebonne	New Orleans, Zachary	Liberty, Galveston, Montgomery	Texas City, Friends-wood	Orange	Craven, Alamance, Madison	New Bern, Greensboro

- Interview topics included:
 - Experience with SAR volunteers and volunteer SAR groups;
 - Communication and coordination strategies with SAR volunteers;
 - EM understanding of volunteer SAR groups operations;
 - EM support for SAR volunteers;
 - Effectiveness of volunteer SAR; and
 - Perspectives on challenges and benefits of volunteer SAR.

Analysis:

- Performed using Atlas.ti.
- Grounded theory approach with descriptive coding.
- Codes/ sub-codes as I) Challenges; II) Opportunities; III) Both.
- Eight categories emerged.
- Categories explained in analysis using: I) 'Assertion development' technique with 'low-level inferences' II) Coded quotations from the interview transcripts.

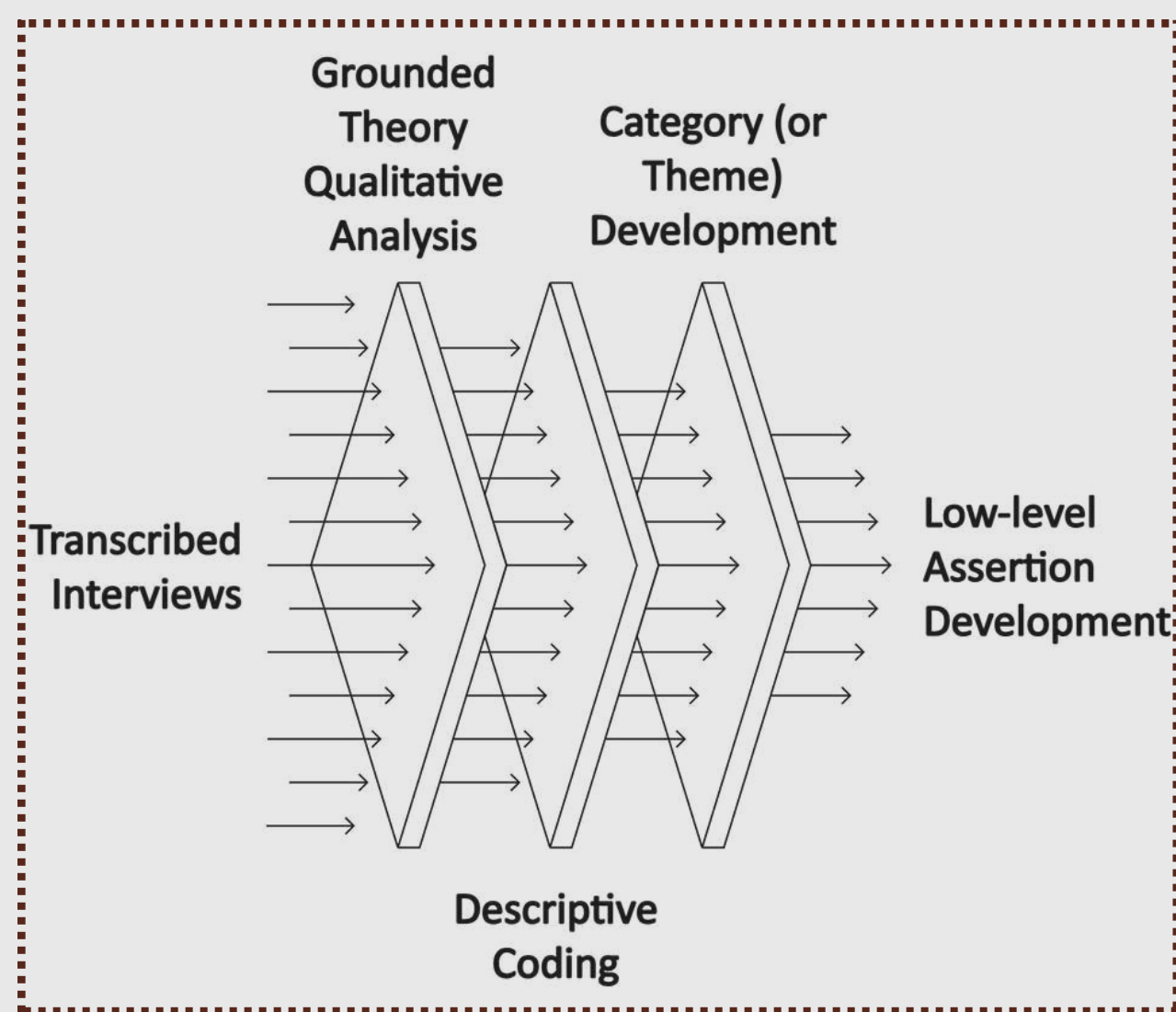


Figure 1. Data Analysis Funnel Chart

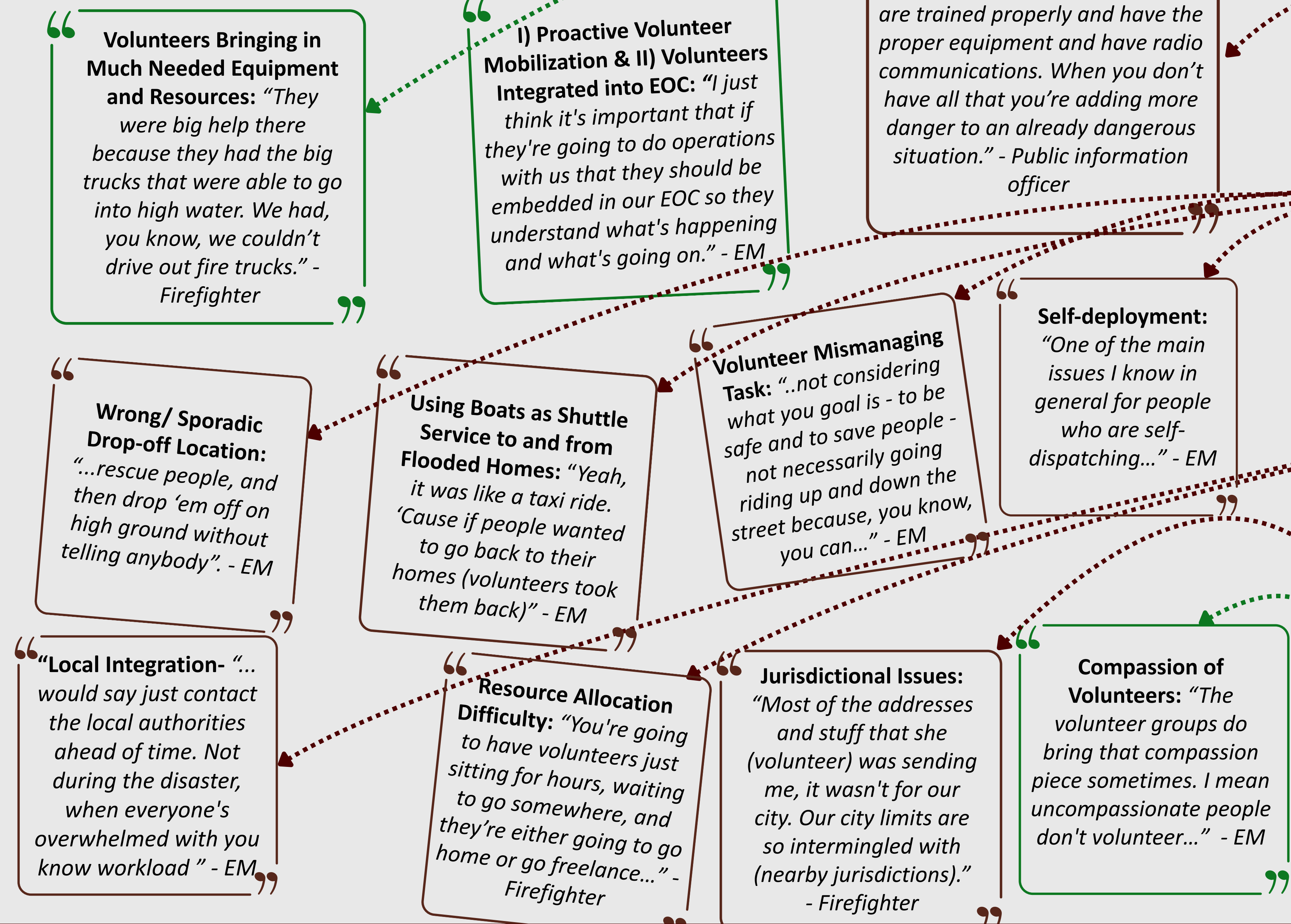
Narratives of Emergency Managers on Volunteer SAR

Legend:

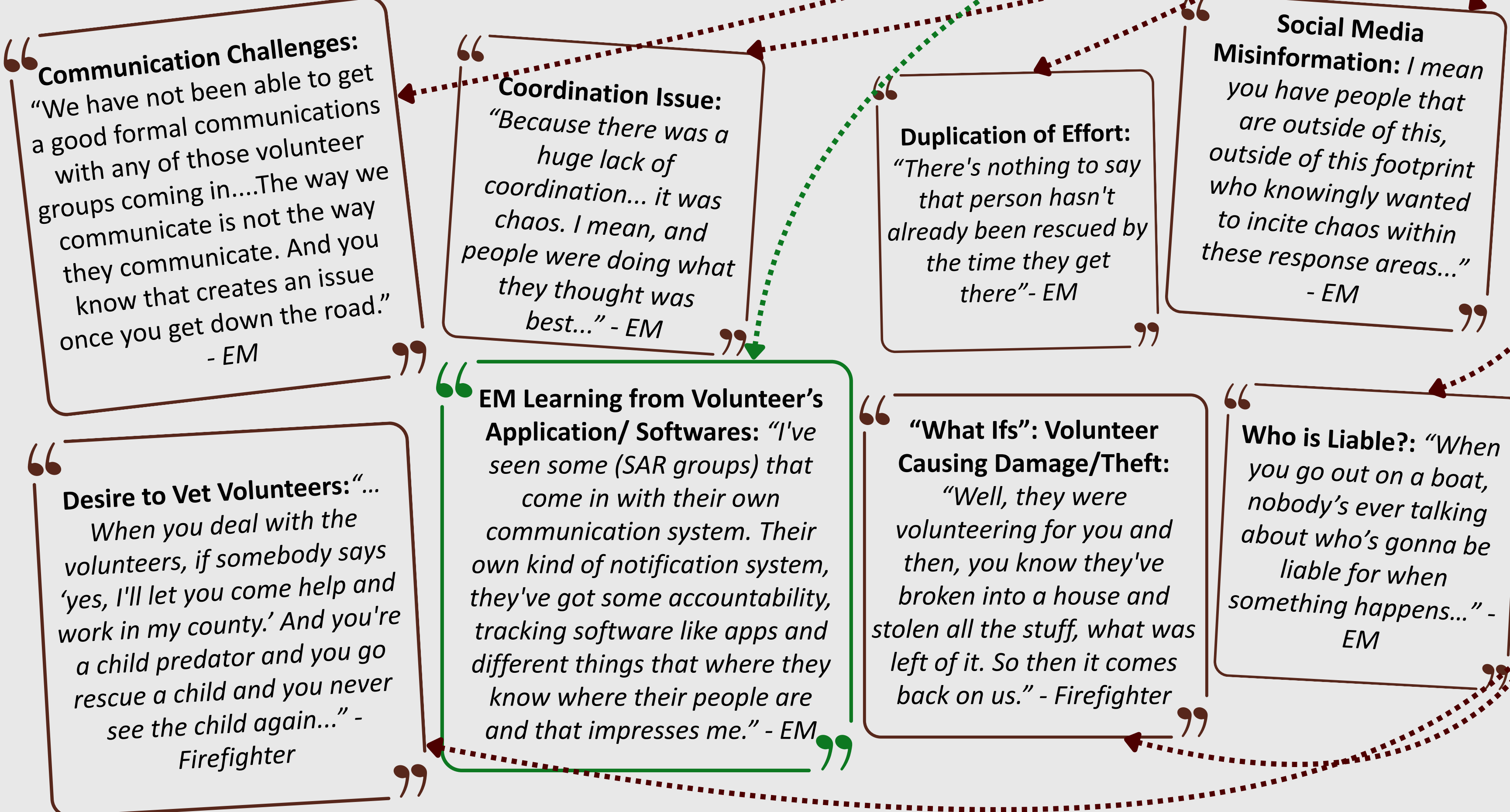
Bold: Code/Sub-code Names

Italic: Quotes/ Reference

Challenge
Opportunity



Pictures from: Gretna, LA; Lumberton, NC; Credit: Stuart Nolan, Carlee Purdum, Kyle Breen



Capacity Issues:

- SAR volunteers offer needed resources in large disasters, yet integration remains chaotic due to EM capacity to manage volunteer convergence
- Need for proactive volunteer mobilization

Efficiency and Commitment:

- Without integration, EMs questioned some volunteers efficiency and commitment to the task
- Self-deployment undermined command and control, resulting in what EMs felt was inappropriate activities

Resource Management:

- Need for local integration
- Need for adequate resource allocation
- Resource mis-match (i.e. number of seats in a boat versus number of vests available)

Institutional Barriers:

- Poor interagency collaboration about volunteers
- Volunteers lack of knowledge about jurisdictional lines

Strong Values:

- Volunteers have a strong sense of compassion to tackle risk and uncertainty

Coordination and Communication:

- Lack of communication methods during rescue operations
- Duplication of effort and misidentification of where need is

Social Media and Technology:

- Some volunteer groups show effective use of technology/ apps to enhance their internal coordination
- Yet social media misinformation undermines efficiency of the whole rescue operation

Liability, Safety, and Injury:

- EMs concerned about accountability for property damage, injuries, and fatalities when volunteers are operating
- Without vetting volunteers, EMs were concerned with legal responsibility

Conclusions and Further Research

Emergency managers see both the benefit of the resources that SAR volunteers and groups bring to large-scale disasters and appreciate volunteers' drive to help. EMs, though, saw numerous challenges related to communication styles, EM capacity to manage volunteer convergence, cross-jurisdiction integration of volunteers, social media, volunteer efficiency, and liability.

Further research should assess: differing perspectives on organized volunteer groups that converge - such as "Cajun Navies" - and individual spontaneous volunteers; how to address liability and vetting concerns; how to manage communication, and how to improve EM volunteer management capacity.