

# Defining "Fast": Factors Affecting the Experience of Speed in Humanitarian Logistics

**Rebecca Walton**  
University of Washington  
[rw Walton@u.washington.edu](mailto:rw Walton@u.washington.edu)

**Robin Mays**  
University of Washington  
[rmays@u.washington.edu](mailto:rmays@u.washington.edu)

**Mark Haselkorn**  
University of Washington  
[markh@u.washington.edu](mailto:markh@u.washington.edu)

## ABSTRACT

Speed is a central value for emergency logistics stakeholders. Emergency response literature makes a compelling case for rapid logistics processes to provide goods and services in humanitarian emergencies. However, speed is not well-defined concept. While situational demand contributes to the need for speed, an important factor is the perception of speed given the experience of the response stakeholders. Unfortunately, the literature lacks complex, situated pictures of how logistics stakeholders experience speed (i.e., what does it mean for a logistics process to be "fast"? What factors affect whether stakeholders perceive a logistics experience as fast?) To address this gap, we explored how logistics stakeholders in a large international humanitarian organization experience and perceive speed of operations. Our findings suggest that (1) the experience of speed is often comparative, not solely objective; (2) close communication between internal clients (field requestors) and service providers (logistics team) can make clients more likely to experience the logistics process as fast; and (3) feeling in control of decision-making can make both clients and service providers more likely to experience the logistics process as fast.

## Keywords

Humanitarian response, rapid response, disaster response, value of speed, humanitarian logistics, business process, offer of speed, comparative experience, decision-making, humanitarian challenges

## INTRODUCTION

Media coverage of natural and manmade disasters has increased both public and industry awareness of the importance of rapid response to disasters. Speed of aid to disaster victims is often vital to their survival. Yet even with this increased awareness of the value of speed to disaster response, challenges abound, and journalists such as Anderson Cooper and Dan Rather arrive to the front lines of disaster before those bringing the aid. (Stetler, 2010; Hagan, 2005) Clearly, the humanitarian community struggles against a host of challenges to offer rapid response.

## Value of Speed

Disaster relief operations intrinsically contain a need for speed. Language regarding the importance of speed abounds in leading emergency response guidelines: "immediate actions to save lives" (FEMA, 2008; UNHCR, 2007), "rapid response" (USAID, 2005), and within the disaster response community's leading authority on response standards, it states actions should be carried out "rapidly" and "as soon as possible" (Sphere, 2004). Long and Wood, in their foundational paper on famine relief, claim that "...in emergency situations, time is more important than cost" (1995). Aldo Benini, who has been researching disaster response for 20 years, claims that speed is universally valued, based on "the premise that the victims cannot wait" (Benini, 2007). Other researchers emphasize the urgency of an effective and immediate response to disasters (Murray and Clarke,

**Reviewing Statement:** This full paper has been fully double-blind peer reviewed for clarity, relevance, significance, validity and originality.

2008).

Thus, the existing literature indicates a common view that speed is an inherent and central characteristic of good disaster response. However, speed is not generally defined either by standards or mission-based guidelines. Sphere guidelines, for example, give strong emphasis to the quality of assessments, and their "timeliness," but fall short of defining or describing what "timeliness" means for speed of response (Sphere, 2004). Little is addressed of what might be considered "slow," or conversely for the case of "too fast," as might be seen with hasty assessments and decisions. There is even less recognition that speed is often a subjective experience of "slow" or "fast," rather than purely objective experience. In addition, there is a gap in complex, contextualized studies of how speed is experienced by the stakeholders involved in providing a rapid response to emergencies. Even the individual international relief agencies lack explicit definitions and measures of speed for response (UNHCR, 2007; UNOCHA, 2006). If speed is a vital characteristic of good disaster response, then both industry and academia would benefit from developing nuanced understandings of how speed is experienced and perceived by disaster response stakeholders.

### Challenges to Humanitarian Logistics

One of the key challenges of humanitarian logistics operations is that of rapid response. Humanitarian organizations are wide and varied, each with its own organizational structure, ways of operating, communicating and making decisions.

Offering a rapid and appropriate response during humanitarian disasters can be a herculean task requiring complex coordination (Balcik, Beamon, Krejci, Muramatsu, Ramirez, 2009; Long and Wood, 1995). Challenges to humanitarian logistics include physical destruction, which limits logistical pathways (Kovacs and Spens, 2007; Samii, 2010); constrained resources, which limit funding during the disaster (Long and Wood, 1995; Oloruntoba and Gray, 2006; Whiting and Ayala-Ostrom, 2009; Benini, Conley, Dittmore, Waksman, 2009); federated organizational structures, which result in autonomous, under-defined, and non-unified operations (Long and Wood, 1995; Benson, Biggers, Wall, Haselkorn, 2010); and bottom-up decision-making, which can limit logisticians' access to decision-makers.

Academic interest in disaster response has been growing in the last decade, with increasing numbers of publications and at least one initiative for a standalone journal (Emerald, 2010). Several factors may have contributed to this increased academic interest: increased frequency and magnitude of disasters, heightened interest from corporate logistics agencies (Russell, 2005; Whiting and Ayala-Ostrom, 2009), and the economic growth of disaster response (Whiting and Ayala-Ostrom, 2009; Carroll and Neu, 2009). Within these academic publications, many scholars have linked the critical need for speed and challenges to humanitarian response to logistics:

"To save lives and alleviate suffering, the response to international emergencies must be timely, effective, appropriate, and well organized. This is where logistics can play a key role. Logistics is central to humanitarian relief. The speed and efficacy of relief programs depends on the ability of logisticians to procure, transport, receive, and distribute supplies to the site of relief efforts." (Russell, 2005)

"The speed of humanitarian aid after a disaster depends 'on the ability of logisticians to procure, transport, and receive supplies at the site of humanitarian relief effort.' " (Kovacs and Spens, 2007)

Despite this growth, humanitarian logistics remains understudied and under-planned, with very little overhead provided by humanitarian organizations for improving humanitarian logistics models. For several reasons, traditional corporate logistics models provide little help to alleviate challenges to humanitarian logistics. Predominantly, these logistics models are focused on financial savings, not saving human lives (Long and Wood, 1995; Benini et al, 2009, Beamon and Balcik 2008); assume highly controlled communication networks and predictable demand, not the chaos of disasters; (Long and Wood 1995; Kovacs and Spens, 2007; Murray and Clarke, 2007), and are oriented to serving customers who are both decision-maker and recipient, versus the highly complex relations of response (Oloruntoba and Gray, 2006).

Specifically, however, there remains a gap in the literature regarding measuring speed of response; instead, the literature emphasizes measuring cost. Logistics research originating from corporate perspectives does include a few concepts relevant to the humanitarian environment, such as recommending that organizations measure average response time (Beamon and Balcik, 2008; Schulz and Heigh, 2009). Some scholars claim that achieving speed in disaster response requires trade-offs between speed and other factors such as quality, cost and coverage (Davidson, 2006; Benini, 2007). The non-profit community does not typically measure the speed of purchase and delivery processes (Beamon and Balcik, 2008), but recent efforts to measure disaster response

have taken a single-faceted, quantitative approach, seeking to measure response time objectively in hours or days, for example, without clearly defining where the clock starts and stops. Further, we observed a gap in the consideration of speed as a relative concept dependent upon the experience of the response stakeholders.

Existing research on humanitarian logistics provides a starting place for understanding speed of disaster response, but there is ample room to expound upon existing knowledge. The emergency response literature makes a compelling case for fast logistics processes to provide goods and services in humanitarian emergencies. Clearly, speed is a central value for emergency logistics stakeholders. However, the literature lacks complex, situated pictures of how logistics stakeholders experience speed: i.e., what does it mean for a logistics process to be fast? What factors affect whether stakeholders perceive a logistics experience as fast?

Our research suggests that single-faceted, quantitative measures of time are inadequate to represent how stakeholders within humanitarian organizations experience speed as a component of the logistics process. Examining speed in context shows that a single, "objective" measure of speed—e.g., three days between order submission and confirmation—can be experienced as slow by some stakeholders and fast by others. We were therefore motivated to understand the factors that may affect a stakeholder's experience of speed. In our study, we found three themes related to humanitarian responders' experience of speed in emergency logistics: comparative considerations, communication, and control of decision-making.

## BACKGROUND

Our research on speed grew out of a series of investigative studies by a large, international humanitarian organization seeking to improve emergency logistics support provided by a global team of experts in emergency logistics.

In 2005, the humanitarian organization conducted significant response efforts in sixty-three countries on four continents. The organization funded an external supply chain study, which determined that approximately seventy-five cents of every dollar spent on the organization's humanitarian efforts were in the areas of logistics and supply chain management. The study highlighted the importance of funding the emergency logistics team to decrease institutional risk and improve the organization's ability to provide disaster relief. In 2007, the organization began to map its internal "as-is" processes for emergency logistics responses. In early 2008, the emergency logistics team identified a need for better information management to more consistently capture, analyze, and share information and to better understand the requirements of the team's internal customers: the requestors working in the field during emergencies. To support the optimization of the emergency logistics team's processes, researchers from the [University Name, to be added after double blind review] partnered with the team to help generate a better understanding of field requestors' logistics needs during emergencies.

At the conclusion of our research, customer feedback and suggested improvements were presented to the emergency logistics team, identifying implications for the team and its work. The presentation was facilitated by an outside, expert change management team, and findings were presented by the project advisor, who is the third author of this paper.

## RESEARCH METHODS

In the latter half of 2007, the second author worked with the emergency logistics team to map existing processes from the onset of disasters to the point of delivery. One-on-one meetings were held with a variety of stakeholders within the organization to document the overall logistics process, which was broken into five sub-processes: logistics request, request for quotes, purchase and payment, cargo release, and delivery. Both direct and indirect stakeholders within the humanitarian organization reviewed these sub-processes to identify pain points and suggest process improvements for more efficient and timely response. The humanitarian organization sought to ensure that these process maps incorporated the views not only of the emergency logistics team but also of field requestors who comprised the emergency logistics team's internal customers. Therefore, the first author conducted research to explore the field perspective of emergency logistics.

During the last quarter of 2008 and the first two quarters of 2009, the first author conducted phone, in-person, and email interviews with approximately 40 employees of the humanitarian organization. These employees worked at the national, regional, and global levels of the organization, representing leadership staff, program staff, and emergency logisticians. Phone and in-person interviews were audio-recorded and ranged from approximately 40-90 minutes. The semi-structured interviews began with interviewees recalling a specific humanitarian emergency and describing their experiences in emergency logistics. Follow-up questions and clarifications focused on four areas: people, processes, tools, and information. The data analyzed in this paper is drawn from primarily the process aspects of the interviews.

In addition to conducting interviews, a research team consisting of the first author and an employee of the humanitarian organization (unaffiliated with emergency logistics) visited two national offices in regions that had recently experienced emergencies. The researchers used a variety of ethnographic techniques such as interviewing, shadowing, observation, environmental analysis, and artifact analysis to gather a rich set of information. The team also led focus group meetings with field staff members to review the detail and accuracy of the logistics process maps.

To encourage participants to be frank and honest about their recent experiences with emergency logistics, none of the emergency logistics team, including the second author, was present during data collection. Further, participants were identified in the final internal report solely by their level (global, regional, or national), role (leadership, program, or logistics), and the type of disaster to which they responded (natural or manmade). In this way, members of the emergency logistics team received useful information, but participants' confidentiality was preserved.

## FINDINGS

Our findings suggest that (1) the experience of speed is often comparative, not solely objective; (2) close communication between internal clients (field requestors) and service providers (logistics team) can make clients more likely to experience the logistics process as fast; and (3) feeling in control of decision-making can make both clients and service providers more likely to experience the logistics process as fast.

### Speed as a Comparative Experience

Speed was a key factor affecting field requestors' satisfaction with the emergency logistics process. However, while speed was universally desired, it was not universally experienced in the same way. Analyzing interview data from both satisfied and dissatisfied field requestors illustrated factors affecting the perception of speed. One such factor is the range of options available, specifically how the speed of these options compare. Speed is subjectively experienced: i.e., the same period of time can seem slow to some stakeholders and fast to others. From a field requestor's perspective, the interpretation of an experience as fast or slow hinges not on emergency logistics *objectively* measured but emergency logistics *comparatively* measured. For example, when the emergency logistics team's services were among the fastest options available, those services were often perceived as fast—even when an objective measure of that service shows that it far exceeded the goal to provide logistics within 72 hours set by the humanitarian organization.

This finding is particularly interesting considered alongside the seemingly contradictory finding that one of the common reasons field responders reported not using the organization's emergency logistics team was because the field requestors believed that the team's logistics services were too slow. The difference in perception—fast versus slow—was directly affected by the range of logistics services that were available in each humanitarian emergency. When the necessary goods were unavailable within the affected region, field responders were more likely to perceive the emergency logistics team's services as fast. The logistics team operated on a global scale and was therefore the fastest option for receiving emergency goods. However, sometimes field requestors were able to procure goods themselves from local sources. In those cases, field requestors were likely to perceive the emergency logistics team's services as slow because field requestors could procure and transport goods in country faster than the emergency logistics team could airlift in goods from other regions of the world.

Field requestors from several national offices said that they preposition goods themselves so that they have goods on hand to distribute within hours of an emergency. For example, in one country, field requestors set up two warehouses and multiple storerooms strategically located throughout the country. They stocked these storage facilities with items that could be packaged into school kits, medical kits, hygiene kits, and food kits by warehouse personnel immediately upon hearing of an emergency. The following quote illustrates the speed of one of these locally driven logistics responses:

"The last emergency we attended to was in [a certain local region]...; there was a flash flood at about 3 or 3:30 a.m. ...In terms of logistics, they needed the food kit, so we coordinated with the local logistics team. We purchased immediately using pre-agreements with suppliers. ...By 7 a.m. they were moving to get the kits. They [the field requestors] got the information and sent the office team to the suppliers, knowing what they needed. The whole process was finished by 8:30 a.m." —*national program staff*

Initially, this example may suggest that locally driven logistics services—i.e., those performed by field requestors—would always compare favorably to globally driven logistics services—i.e., those performed by the emergency logistics team. However, that is not necessarily the case. When the emergency logistics team prepositions goods and offers logistics training and preparedness assessments, the logistics team may well provide comparatively fast services.

Even when necessary goods are not available in country during an emergency, field requestors consistently seek the comparatively fastest option. If any options outperform the emergency logistics team in terms of speed, then field requestors perceive the logistics team as slow. For example, several field requestors said that they procure goods from other national offices in their region because that is often a faster option than using the emergency logistics team:

"When we need [the emergency logistics team], we tell them what we need and they tell us 'you can get this stuff from us but we can't tell the time it will take to get to the country and distributed to the people because we might have issues with customs.' That's why sometimes we prefer to get them from other countries [national offices]." —*national program staff*

"When deciding to get it from outside [the country], we were asking ourselves whether to get it through [the emergency logistics team] or through other markets, such as from national offices of neighboring countries. ...Speed is important, and that's why it's critical to have contacts with other neighboring offices." —*national program staff*

Any goods arriving from outside the affected country would need to pass through customs—whether those goods arrived from neighboring national offices or the emergency logistics team. Thus, these quotes suggest that, given two potentially equal options, field requestors may choose the option that gives them more control over decision-making. The relation of decision-making and perception of speed is discussed further in the third section of the findings.

Analyzing the logistics process maps provided another example of how stakeholders differed in their definitions and perceptions of "fast response." Often stakeholders who were neither field requestors nor emergency logisticians had the slowest definitions of what constituted a rapid response. These stakeholders were critical at certain steps in the logistics process but were both geographically and experientially removed from the disaster itself. For example, financial officers viewed a single business day as a very fast response. Compared to their typical turn-around time for non-emergency situations, a single business day was fast. However, other stakeholders, such as emergency logisticians and field requestors, experienced the response time of a single business day as problematically slow—particularly on evenings and over weekends. Fortunately, this disconnect in stakeholders' definition of "fast" was not intractable. When logisticians communicated how delays over evenings and weekends negatively affected disaster response for other stakeholders, the financial officers accommodated changes that would shorten response time to meet other stakeholders' definitions of "fast."

Additionally, the logistics team often referenced an organizational mandate to deliver goods within 72 hours. We observed that while the logistics team agreed that the organization has an expectation and high-level claim to deliver goods to a disaster location within 72 hours, they also acknowledged this mandate is not well-defined. The logistics team and other logistics stakeholders debated and discussed how to interpret the mandate. Some believed the timeline began from the onset of a disaster. Others believed the 72-hour timeline began from first contact with the field requestor or at the point of an official request for movement of goods. Yet others believed the timeline started at the point permission was granted to proceed with the movement. Whether the 72-hour timeline ended at arrival at airport (before customs clearance), acceptance by national office logistician (after customs clearance), or arrival at intermediate or final distribution was also the subject of internal debate. Further, the team had been struggling to develop a mechanism for capturing, monitoring and reporting response time. Hence, in this case, this measure of speed was also largely of subjective interpretation.

In conclusion, although speed is valued by logistics stakeholders, these stakeholders interpret specific logistics experiences as fast or slow in comparative, not just objective, measures.

### **Relation of Communication and Experience of Speed**

A second key finding was that the experience of speed is relative to the level of communication. Particularly between logistics experts and field requestors, communication has a significant effect on whether a particular logistics response is considered fast or slow. We found that rapid, ongoing communication between logistics experts and field requestors positively affected field requestors' perceptions of speed. Close communication reassured field requestors that logistics services were as fast as possible. So even if those services did not meet the objective measure of response speed set by the organization, field requestors believed the speed to be satisfactory—that is, "fast."

For example, consider the following quote from a satisfied field requestor:

"In terms of our situation, it was great. Inquiries were made via email, and the reply was quite quick, and they [the emergency logistics team] sent a list of what was available, and they offered to

order more and send more, but it was enough for us. Then we made an official request, and we got it in a week. No, as I say, everything was perfect.” —*national program staff*

This field requestor said that “everything was perfect” when he received goods approximately a week after ordering them. Even within the best case context of the 72-hour mandate, a one-week response time would not be fast by objective measure. In fact, email analysis of the communications regarding that order shows that the national office received the items nine days after the order. However, in reflecting on this logistics experience, this satisfied field requestor mentions speed of communications even before speed of service, suggesting a correlation between communication and the perception of speed.

Another example of communication’s effect on perceived speed occurred when the expert logistics team received an inquiry regarding particular goods in early October 2008. The team informed the field that, due to a run on these goods in late September, the warehouses were out of stock. By the time the field requestor placed a formal order one month later, the goods were still out of stock. The emergency logistics team kept in prompt email contact with the field requestor regarding the status of the stock, but it was late December 2008 before the goods were available, and the holidays then slowed the movement process further. Throughout the movement process, the emergency logistics team answered all emails promptly (within 24 hours even during holidays). However, from initial inquiry to receipt of shipment, the process took three months. Again, we see how “fast” response time is interpreted: in this case, the response time extended well beyond a 72-hour timeline, but the field requestor was positive about the experience, calling it a “great job.”

In analyzing the existing processes of the emergency logistics team, we found that maintaining this prompt, close communication with field requestors was a significant challenge due mainly to the heavy workload on the team’s staff and its manual communication tools. The team’s global supply chain was managed almost solely by one full-time employee, who handled most emergency logistics requests from initial contact through delivery in country. During times of multiple disasters or a single enormous disaster such as the December 2004 tsunami, this workload could be overwhelming:

“...with multiple shipments every day, it’s a challenge to finish each shipment and keep up with the next one. They rotate on top of each other, and you’re trying to keep up. You have to stay focused, and sometimes it can be confusing what shipment we’re talking about.” —*emergency logistics team*

The heavy workload was exacerbated by manual communication and tracking systems that required the emergency logistics team to perform not only high-cognition tasks, such as analyzing quotes to identify the best value, but also low-cognition tasks, such as remembering to check the delivery service tracking website and pass along a shipment update to the field requestor. The quote below illustrates some of the problems that result from the manual, non-integrated tools supporting the team’s request and movement process:

“...What I’ve done to help with that [difficulty in keeping up with multiple shipments] is that sometimes—I’m not consistent with this but—in our shipment folder I’ll put a piece of paper in there just with quick notes with the status of each shipment. It’s hard to know if you’re just coming in off the street picking up a folder what is the status of this shipment. And it’s not always possible looking at an email to know. ...Like there were a couple of emails with subject lines with ‘Water Purification Units,’ but the email was about the satellite phones.” —*emergency logistics team*

This informality in communication between the emergency logistics team and field requestors can be especially problematic in the case of shipping delays. While shipping delays can be unavoidable, a breakdown in communication between the logistics team and the field can generate an impression of the logistics experience as slow and unreliable:

“If I have been told ‘you will have the items on Tuesday,’ then I will have told people like our beneficiaries and other agencies at interagency meetings that we will bring this and it will be there on Tuesday, and then it isn’t, and I don’t even know because no one has told me. Maybe it will not be there for another two weeks because they [the emergency logistics team] are working on something else, and no one has let me know.” —*global program staff*

This example also relates to our third finding: the relationship between control of decision-making and perception of speed. When stakeholders believe that they have adequate information to support decision-making and when they are given the option of making “go/no go” decisions, they may be more likely to perceive the overall logistics experience as fast. This finding is described in more detail in the next section.

### **Relation of Decision-Making and Experience of Speed**

The third finding identifies a relationship between stakeholders’ ability to control decision-making in the logistics process and their perception of whether that process was fast. Like the previous findings, stakeholders’

perceptions of speed were largely subjective, and "fast" often meant "as fast as possible." In this case, being informed and able to make decisions during the logistics process affects whether stakeholders believe that the process is as fast as possible.

Field requestors were not the only stakeholders who identified decision-making as a pain point for enabling fast emergency logistics. Some of the emergency logistics team's greatest frustrations were related to relying on other stakeholders to make decisions because the emergency logistics team lacked decision-making power at points in the logistics process:

"We're ready as [emergency logistics team], but others can't make a decision. [Humanitarian organization] is last at the party for these disasters because there is a sense of conservatism that says, 'air lifting is too expensive; maybe we won't have the money' instead of taking a calculated risk and being there with [humanitarian organization] goods being airlifted into the country and having a CNN moment." —*emergency logistics team*

"We can't send shipments until someone pulls the trigger and tells us to go; then we can work quickly. The complaint of delays are because we are so decentralized—national director, regional relief director, ... Everyone has their own little goals which conflict with each other. I'm ready to go ready to ship, but I can't get confirmation because someone higher up in the field must make a determination. There are too many decision-makers and red tape." —*emergency logistics team*

"[Humanitarian organization] has decentralized, and the field office can accept or reject any recommendations given them. I think that when it comes to humanitarian disaster response, decision-making should be centralized to ensure good communication. ... For example, there was such quick procurement of tents for Iran; we finished the whole operation quickly, and people asked me, 'how did you do that?' It went fast because not too many people were involved. When you have so many players, it is harder." —*emergency logistics team*

Again, these quotes highlight the connection among communication, decision-making, and the experience of speed. Additional examples come from the process mapping sessions, in which confusion regarding funding inhibited decision-making. Stakeholders were unclear who should decide the status of funding at certain points in the emergency logistics process, and many stakeholders felt disconnected from those decision-makers. Therefore, when the emergency logistics team received requests, it was confusing and time consuming to verify the availability of funds and payment authorization. A large obstacle to speed from the logistics team's perspective was its inability to 'push' goods in the beginning hours of a disaster and instead having to wait for a decision from the field. Field requestors also identified the lack of decision-making control for response funding as frustrating and detrimental to the speed of response:

"The first question you get from a national director when you offer to help is, 'Who's going to pay for it?' This does not allow a rapid response. If I need to work with support offices or emergency funds, [I] lose a day, and that is too much." —*national leadership staff*

This finding regarding the relation of decision-making to perceived speed correlates with other scholars' work. For example, Murray and Clarke identify a disconnect between long-term staff and relief-specific staff in which relief staff became frustrated with the long-term's staff slower processes: "the [long-term] staff were wonderful people, but their mind was development mode... 'we normally get three quotes—can you [go] down and get three quotes?' ... five signatures for [a purchase] in an emergency relief situation is just ludicrous" (2008).

In addition, the information available to support decision-making can affect perceptions of speed. For example, some logistics team members indicated that they send field requestors a list of *all* items in stock, whereas other team members said that they send a list of *recommended* items. However, some field requestors found the information sent by the emergency logistics team to be confusing. For example, one field requestor said that she had to review multiple documents and then follow up with the team directly to confirm which items were available:

"Documents on the stock availability of [goods] at the different pre-positioned hubs were available but had to use some time to surf the different [organizational] databases to locate them. Also, the documents were not very updated in terms of stock availability. Needed to contact [emergency logistics team] to confirm the available quantity and unit price. It would be good if [emergency logistics team] provides regular update on their stock availability at different hubs and have the updated documents in relief forum database." —*regional program staff*

This quote suggests the importance of information for decision-making and the relationship between decision-making and speed: The field requestor "had to use some time" to compile her own information to support decision-making.

Another factor affecting decision-making and the way stakeholders experience speed is the fact that the decision-maker in the field varies from situation to situation. Interviews with field staff confirmed that the actual job title of the person coordinating logistics requests can vary greatly, depending on factors such as the capacity of the national office where the emergency has occurred, whether and how quickly additional personnel arrive, and whether the emergency is sudden or slow onset. For example, at one national office, the regional manager consistently decided where to procure items and served as the main contact with the emergency logistics team. This national office had particularly high-capacity employees and consistent, slow-onset emergencies. However, a different national office had high-capacity management but mostly young, inexperienced staff members, and it experienced a significant, sudden-onset emergency. During this emergency, the employee who coordinated requests with the emergency logistics team was a financial analyst who stepped into the role of field requestor at the request of management. This variation in field requestors has implications for decision-making, as inexperienced field requestors are likely to require more information about logistics and the coordination process than more experienced field requestors. Further, experienced field requestors may be more familiar with the logistics process and aware of when time-critical decisions must be made.

## CONCLUSIONS

In conclusion, our research suggests that while speed of response in emergency logistics can be objectively measured, it is subjectively experienced by stakeholders, and several factors affect whether that experience is interpreted as fast or slow. Our findings identify three of these factors: speed is relative to (1) the available options, (2) level of communication, and (3) degree of decision-making control. In our first finding, stakeholders are likely to experience a particular logistics process as fast if it is as fast or faster than the other available options. Second, when communication is rapid and ongoing, field requestors are reassured that the logistics process is moving as fast as possible: therefore, fast. Finally, being informed and able to make decisions during the logistics process affects whether stakeholders perceive the process to be fast. While we believe that these findings offer useful implications for both practitioners and academics (discussed below), there are limitations of this research that should be acknowledged. The primary limitation is unavoidably linked to the study's primary strength: it is a case study. Case studies allow the type of highly contextualized, detailed data collection and analysis that we sought in our efforts to more richly understand how speed is experienced. However, case studies produce highly specific findings that other researchers must consider carefully to gauge the transferability of the findings to other contexts. To support researchers in making that judgment, we present some further information about the organization being studied. As a leading large NGO within humanitarian practice, this organization strives to serve those suffering, subscribes to and abides by the International Red Cross Code of Conduct's principles of humanity, neutrality, impartiality, solidarity and the humanitarian imperative to provide assistance wherever needed. The NGO delivers relief through established national teams and local partners, often entrusted with ongoing development projects. This NGO cooperates as a part of a greater community, walking along side host nation governments and participating in wider coordination meetings. More uniquely, the organization holds a federated structure, sharing power across organizational divisions (national, global, regional) and absent of overly top-down decision-making. In other words, the NGO's organization is more flat than hierarchical.

This research has several implications for both practitioners and academics working in emergency logistics. In particular, this work highlights a gap in complex understandings of speed—in particular, the way that speed is perceived and experienced by logistics stakeholders. While existing literature confirms the importance of a fast response during disasters, "fast" is rarely detailed beyond, at best, a broad response deadline: e.g., within 72 hours of the emergency. Our research shows that, while objective measures are one facet of speed, subjective experiences are also important to a successful response effort. This finding suggests that emergency response organizations should develop deeper understandings of the factors that affect field requestors' and logistics experts' speed of response and not only work to shorten the response timeline but to improve the experience of the response timeline: not just quantity but quality of experience. Developing this deeper understanding by conducting a contextualized investigation of speed can provide further potential benefits: for example, identifying ways to improve speed, in addition to measuring it.

Our findings suggest that an appropriate place to start with improving the experience of speed is communication. Improving communication between internal clients (field requestors) and service providers (logistics experts) can make the same objective measure of time seem fast, where without such close communication, the same length of time may be considered slow.

In addition, our findings identify a relationship between decision-making and perceptions of speed. Specifically, field requestors may be more likely to perceive a time period as fast if they were able to maintain control of



decisions during the logistics process. Our findings suggest that it may be useful for organizations to examine existing processes and initially focus on where strategic decisions intersect with tactical decision points. To positively affect the way decision-makers perceive the speed of service, organizations should ensure that decision-makers are in close communication with logistics service providers before these key decision points and that decision-makers have useful information to support that decision. However, streamlining decision points could be a challenge because it would require all stakeholders except the designated decision-makers to relinquish control. As suggested by our study, stakeholders who do not believe that they have decision-making control are more likely to perceive a process as slow. Thus, we believe that this is a key area for future research that could build upon the complex picture of emergency response speed presented in this paper.

## ACKNOWLEDGMENTS

We thank the relief workers, logisticians, and their organizations for allowing the University of Washington to take part in this study. Our gratitude also goes to Jennifer Hill for her tremendous insights and assistance on this project. Finally, we thank the ISCRAM community for providing a forum for the ongoing work to bring effective understanding and solutions to some of the world's toughest problems. This work was supported in part by award #4112-31804 from Purdue University (VACCINE) and the Department of Homeland Security.

## REFERENCES

1. Beamon B. and Balcik, B. (2008) Performance measurement in humanitarian relief chains. *International Journal of Public Sector Management*, Vol 21, No 1, pp 4-25.
2. Benini, Aldo and Conley, Charles (2007) Rapid humanitarian assessments and rationality: a value-of-information study from Iraq, 2003-04. *Disasters*, Vol 31, Issue 1, pp 29-48.
3. Benini, Conley, Dittmore, Waksman (2009) Survivor needs or logistical convenience? Factors shaping decisions to deliver relief to earthquake-affected communities, Pakistan 2005-06. *Disasters*, Vol 33, Issue 1, pp 110-13.1
4. Benson, A., Biggers, K., Wall, J. and Haselkorn, M. (2010) Adaptive development of a common operating environment for crisis response and management. *Proceedings from the 7<sup>th</sup> Annual International Conference on Information Systems in Crisis Response and Management: Defining Crisis Management 3.0*, Seattle, Wa.
5. Alan Carroll, Jens Neu, (2009) Volatility, unpredictability and asymmetry: An organising framework for humanitarian logistics operations?, *Management Research News*, Vol. 32 Iss: 11, pp.1024 - 1037
6. Emerald Publishing (2010). *Call for Papers for Journal of Humanitarian Logistics and Supply Chain Management*, Retrieved from [http://www.emeraldinsight.com/products/journals/call\\_for\\_papers.htm?id=2733](http://www.emeraldinsight.com/products/journals/call_for_papers.htm?id=2733)
7. Federal Emergency Management Agency (FEMA) (January, 2008) *National Response Framework*. Retrieved from <http://www.fema.gov/emergency/nrf/>
8. Hagan, Joe (2005, Jan 9) Anderson Cooper, Dan Rather Jr., emotes in Sri Lanka, *New York Observer*. Retrieved from <http://www.bookrags.com/news/anderson-cooper-dan-rather-jr-emotes-in-moc/>
9. Kovacs, Gyongyi and Spens, Karen M. (2007) Humanitarian logistics in disaster relief operations, *International Journal of Physical Distribution & Logistics Management*, Vol. 37, Issue 2, pp. 99-114.
10. Long, D and Wood D (1995) The logistics of famine relief, *The Journal of Business Logistics*, Vol. 16, Issue 1, pp. 213-229.
11. Murray, S and Clarke, M (2008) Improving the capacity to respond: examining the experiences of short-term tsunami relief staff, *Journal of International Development*, vol. 20, no. 4, pp. 466-480.
12. Oloruntoba, Richard and Gray, Richard (2006) Humanitarian aid, an agile supply chain? *Supply Chain Management, An International Journal*, Vol. 11, Issue 2, pp.115-120.
13. Russell, Tim (2005) *The humanitarian relief supply chain, analysis of the 2004 south east Asia earthquake and tsunami*, unpublished master's thesis, Massachusetts Institute of Technology, Cambridge, MA. Retrieved from <http://dspace.mit.edu/bitstream/handle/1721.1/33352/62412847.pdf?sequence=1>
14. Schulz, Sabine F. and Heigh, Ian (2009) Logistics performance management in action within a humnaitraina organization", *Management Research News*, Vol 32, Issue 11, pp. 1038-1049.
15. Samii, Ramina (January 2010) *The unique challenges of Haiti's emergency logistics*. Retrieved from: <http://rsamii.blogspot.com/2010/01/unique-challenges-of-haitis-emergency.html>

16. Stetler, Brian (2010, Jan 24) TV news desks prepare to wind down Haiti coverage, *New York Times*, pp. B1 or Retrieve from <http://www.nytimes.com/2010/01/25/business/media/25coverage.html>
17. The Sphere Project (2004) *Humanitarian Charter and Minimum Standards in Disaster Response*, Retrieved from: [http://www.sphereproject.org/component/option,com\\_docman/task,cat\\_view/gid,70/Itemid,203](http://www.sphereproject.org/component/option,com_docman/task,cat_view/gid,70/Itemid,203)
18. United Nations High Commissioner for Refugees (July, 2007) *UNHCR Handbook for Emergencies*, 3<sup>rd</sup> Edition, Retrieved from <http://www.unhcr.org/publ/PUBL/471db4c92.html>
19. United Nations Office for Coordinating Humanitarian Affairs (2006), *UNDAC Handbook*, Retrieved from <http://ochaonline.un.org/OCHAHome/AboutUs/Coordination/UNDACSystem/UNDACHandbook/tabid/6012/language/en-US/Default.aspx>
20. United States Agency for International Development, Office of Foreign Disaster Assistance (July, 2007) *Field Operations Guide for Disaster Assessment and Response*, Version 4.0, Retrieved from [http://www.usaid.gov/our\\_work/humanitarian\\_assistance/disaster\\_assistance/resources/pdf/fog\\_v4.pdf](http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/resources/pdf/fog_v4.pdf)
21. Whiting, M and Ayala-Ostrom, B (2009) 'Advocacy to promote logistics in humanitarian aid,' *Management Research News*, Vol 31, Issue 11, pp1081-1089.