

Two Faces of Disaster Response: Transcending the Dichotomy of Control and Collaboration During the Nepal Earthquake Relief Operation

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In the aftermath of the devastating earthquakes in Nepal, a large scale humanitarian response was launched. We studied the response operation four weeks after the last quake, using participant observations and interviews. Our findings indicate that the response operation was characterized by two faces: control and collaboration. These are rooted in governance models of chaos, command and control, versus continuity, coordination and collaboration. Using the case of Kathmandu Living Labs, we show how during the first phase of the response formal humanitarian organizations gradually pushed aside important grassroots initiatives. In the second phase, we analyse how the government sought to take control of the response by formally ending the relief phase, having regained itself after the shock of the first impact. Drawing on these results, we theorize consequences for network governance, and identify a new governance mode that transcends the dichotomy between control and collaboration: net-centric governance.

Keywords: Control, Collaboration, Nepal, Network Governance, Net-centric Governance, Humanitarian Response

Disaster Strikes: The Nepal Earthquakes

On Saturday April 25th 2015, Nepal was hit by a massive earthquake, measuring 7.8 on the Richter scale. This event was followed a mere 17 days later by another major earthquake, measuring 7.3 on the Richter scale. The second earthquake destroyed much of the already damaged infrastructure from the first quake. As a result of the earthquakes, approximately 9000 people lost their lives and an enormous number of properties were seriously damaged. In some districts up to 99% of the infrastructure – residential homes, businesses, and several ancient UNESCO World Heritage sites – was completely destroyed (OSOCC, 2015). During this period, over 300 aftershocks took place and continued to create fearsome circumstances for the Nepalese population.

The majority of the affected areas were not located in the proximity of the capital city Kathmandu, but in the more remote areas surrounding it, such as the districts Gorkha, Dhading, Nuwakot, Rasuwa, Kavrepalanchok, Dolakha, and Sindhupalchok (OSOCC, 2015). However, due to landslides and structural damage to the roads some of these areas were hard to reach. The remoteness of the affected areas, therefore, provided a major challenge for the 34 countries, foreign search and rescue teams, and numerous NGOs that came to assist the Government of Nepal, the Nepali army, and police forces with search and rescue operations and initial relief work. Over the following months, what is known as ‘the last mile of aid’ towards the most affected communities in the remote mountain districts, remained a major challenge in national and international attempts to control the response operations.

Attempts to control local initiatives in disaster relief operations have manifested in response to many disasters, such as Hurricane Katrina (Comfort 2007), but often meet what we conceptualize as the two faces of disaster response. One face refers to emergent, community-based response initiated by locally affected people who seek to fill a void left by official response organizations. The other face refers to the quest for control by the official response organizations who seek to retake the response initiative. Solnit (2010) metaphorically described this tension as a ‘paradise built in hell’, whereby ‘hell’ refers not only to the chaos caused by the disaster, but also to the government’s failure to control it, and whereby ‘paradise’ adheres to the remarkable capacity and resilience of emergent local community responses.

In this paper we explore and theorize how these two faces of disaster response emerge and guide relief and recovery into different directions. To explore this tension, we ask the following research question: How did the local Nepalese communities, governmental bodies, and the humanitarian organizations govern the relief operation in the first months after the earthquakes struck? We also address a more fundamental, underlying theoretical debate concerning the dichotomy between control and collaboration at times of disasters, aimed at identifying novel ways and resilient governance structures that can overcome the dichotomy between emergent collaboration and control. To this end, we propose a second, more theoretical question: how can we understand the dichotomy between control versus collaboration

in the Nepalese case, and what governance approach can be used to overcome this dichotomy?

This paper is organized as follows: first we theoretically introduce the two governance modes of control and collaboration, and explain how the dichotomy is embedded in the theoretical debate on disaster studies. Next, we explain our research approach toward exploring how the dichotomy appeared in the actual relief operation. Our analysis is based on ethnographic field research in the capital city of Kathmandu, and the remote northern districts of Nuwakot and Rasuwa, conducted four weeks after the second earthquake struck. In the findings section we describe two different attempts to control emergent initiatives during the relief operation, by both the humanitarian community, and the government of Nepal. Our first case analyses how the grassroots initiative of Kathmandu Living Labs was pushed aside by the dominant actors and actions in the official UN cluster coordination system. The second case analyses how the relief operations driven by INGOs was hindered by the attempt of the government of Nepal to regain control over the response. We conclude the paper by discussing how the dichotomy between control and collaboration can be overcome, introducing an alternative, net-centric governance model for emergent response initiatives.

Two Governance Models of Disaster Response: Control versus Collaboration

Disaster sociology distinguishes two distinct governance approaches toward disaster response operations, which roughly reflect the attitude of response organizations toward the affected population (Dynes 1994). The first approach, dominant in practice, was conceptualized by Quarantelli and Dynes (1977) as the chaos, command and control model. In this governance model the assumption is that disasters cause ‘Chaos’, which can be put under ‘Control’, by a strict ‘Command’ structure (Quarantelli and Dynes 1977). Originating from the experience of military operations, the assumption underlying this model is that seeking command and control of a situation is the most effective means for dealing with threats. According to this logic, disasters are consequently perceived from an analogy of war, whereby the disaster is approached as the ‘enemy’ to be defeated (Lindell et al. 2001). Since many disaster response organizations evolved from the military domain, these assumptions still prevail as the underlying rationale during relief operations (Steinberg and Shields 2008).

This logic of military operations is most directly translated into Incident Command Systems that are used to govern disaster response operations (Bigley and Roberts 2001). They define a clear set of roles, administrative procedures, and command lines that create sufficient common ground to govern official disaster response organizations. By arranging a clear coordination structure in advance, the command systems provide accountability and predictability. While these structures are often perceived to be rigid, studies towards their use has also described their capacity for flexibility, when existing structures are adapted to the changing situation

at hand (Boersma et al. 2014a). For instance, Bigley and Roberts (2001) describe how incident commanders adapt and change the incident command structure in action by switching between predefined roles, and by employing only specific modules of the command structure that are applicable to the situation.

The merits of the Chaos, Command and Control model is that it is a powerful instrument for accomplishing tasks characterized by repetition and uniformity. Clear assignments, training, and protocols allow the response organization to prepare for chaotic disaster situations. This clearly relates to the notion of ‘command in war’ (Van Creveld 1985), in which the actions of soldiers are controlled based on the compliance with strict orders. The underlying rationale is that repetitious training will trigger the correct reaction when soldiers are put under stress.

Current developments in military doctrine, however, show a movement away from control towards directive command (Shamir 2010). This means instead of detailed orders, an overarching goal governs the operation that depicts the ‘commander’s intent’, which is found to be increasingly effective in chaotic and turbulent situations (Keithly and Ferris 1999). To support command and control of the operation in progress, a new operational concept of ‘network centric operations’ is increasingly gaining relevance (Wolbers 2016). In network-centric operations the exchange of information between a heterogeneous set of actors is improved by using a shared information system (Alberts and Hayes 2003). This results in a common operational picture, which often takes the shape of a map depicting the progress of the response operation (Wolbers and Boersma 2013).

What becomes clear from this discussion is that the Chaos, Command and Control model is primarily internally directed. Citizens are categorized as inconvenient bystanders that need to be controlled (Helsloot and Ruitenbergh 2004). Spontaneous actions of citizens are seen as disruptive to the command and control structure, and need to be controlled by force. In general, disaster response agencies tend to resort to means of control for protecting the existing social structures and to restore public order (Tierney et al. 2006; Quarantelli and Dynes 1977). The paradoxical result is that the resilience of communities during disasters tends to be hampered, rather than supported by government responses, due to their quest for control (Solnit 2010).

Research on emergency response also shows that control and centralization are often unrelated or even destructive to actual response capacity (Moynihan 2009). Moreover, Tierney et al. (2006) show that engaging in a militaristic command style of disaster response can literally have lethal consequences; for instance, citizens affected by Hurricane Katrina were symbolically regarded as the enemy that needed to be defeated, instead of victims that needed help (Curtis 2008). This astonishing notion is well-illustrated by the title of a salient National Guard article, describing the military response to Katrina as ‘Troops begin combat operations’ (Chenelly 2005; Tierney et al. 2006). Hurricane Katrina and the Haiti earthquake became classic examples of failing response management: coordination between the responders, relief workers and citizens occurred haphazardly if at all (Comfort 2007; Majchrzak et al. 2007). It showed that imposing a Chaos, Command and Control governance mode on a disaster is limiting, because it fails to integrate the overall community response.

A second governance model for disaster response has evolved over the past decade, based on an alternative logic of Continuity, Coordination and Collaboration (Dynes 1994; Helsloot and Ruitenberg 2004). This model is based on the recognition that during disasters, emergent and unforeseen collaborations appear when demands are not met by existing response organizations, or when responses are insufficient or inappropriate (Drabek and McEntire 2003). The Continuity, Coordination and Collaboration model moreover suggests that in the aftermath of a disaster, society does not necessarily spiral into chaos, but that existing (social) structures often remain in place and are used to form emergent community responses. Indeed, a body of sociological research corroborates this assumption (Helsloot and Ruitenberg 2004; Solnit 2010; Tierney et al. 2006), showing that social and institutional structures to a large extent remain intact. Thus, rather than seeking to control these structures, response organizations are challenged to more effectively tap into them and harness the capacities of the affected and responding community. This requires collaboration and coordination with a broad variety of stakeholders and local communities in emergent networks.

Emergent networks fill an important void that cannot be filled by command and control approaches to disaster response, because they comprise adaptive partnerships that did not exist before the disaster struck (Tierney et al. 2006). Using emergent networks, and the expertise that is harnessed inside them, is increasingly recognized as the most effective and sustainable way to face disaster consequences (Majchrzak et al. 2007). Still, emergent networks are hard to govern for formal response organizations, because they form serendipitously during disasters, and are characterized by fleeting membership, dispersed leadership, unclear boundaries, and unstable task definitions (Majchrzak et al. 2007). Therefore, harnessing the potential of emergent networks requires linking them up with other public, and non-governmental organizations active in the response operation (Kapucu and Hu 2014).

The result is that networks emerging from the combination of emergency response organizations with other parties reflect a core-periphery structure (Varda et al. 2009), whereby dedicated governmental emergency organizations form a core set of actors with recurrent interactions, and whereby other parties connect in a more scattered fashion along the periphery (Robinson et al. 2013; Wolbers et al. 2013). An example of such a core-periphery structure is the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) cluster coordination of (I)NGO assistance, which is activated on the request of the affected national government (Oh and Lee 2015). Given the importance of coordination at times of an emergency, the UN General Assembly rolled out this formal system to facilitate the coordination of humanitarian aid as far back as 1991. Cluster coordination is regarded as attempt to reach functional coordination (Jahre and Jensen 2010). In this structure, activities are connected at the cluster level, and clusters are coordinated by a lead actor.

The cluster system is a prime example of network governance through a 'network administrative organization', which entails that a separate administrative entity is set up to govern the network (Provan and Kenis 2008). In correspondence with this definition, the cluster system is a separate administrative entity whose sole purpose is

to coordinate and govern the humanitarian community. In addition to this mode of network governance, Provan and Kenis (2008) have identified two other network governance modes: participant governance and lead organization governance. In the mode of participant governance, the network is governed by the members themselves, without a separate governance entity or structure. In the mode of lead organization governance, the network is governed by a single network member.

In practice, however, cluster coordination requires a trade-off between multiple types of governance. Jahre and Jensen (2010) show that in principle each cluster is governed by a cluster coordinator, which corresponds to a lead organization governance mode. Yet, the focus on coordination within clusters draws attention away from other types of network governance: vertical coordination toward ‘operations on the ground’, the need to coordinate among the clusters, and the need to strengthen representation of beneficiaries (Jahre and Jensen 2010). While the cluster system offers a fixed structure for the core network, Oh and Lee (2015) also suggest that local circumstances lead to different forms of network governance. These differences may be due to the way in which the structure of societal (self)organization intersects with disaster relief operations. For instance, following the Haiti earthquake, the government had long-standing established relationships with international agencies, and thus fitted seamlessly into the cluster coordination model. In contrast, Japan tended toward another type of international assistance after the 2011 earthquake, relying heavily on the United States (Oh and Lee 2015). These differences point to variation between national systems in terms of accommodating international assistance. This suggests that in major disasters, competing principles for coordination and network governance operate simultaneously, each with their own limitations.

In sum, the functioning of distributed, emergent coordination that meets these needs is not yet fully understood (Topper and Carley 1999). Including local communities in the response network and facilitating their efforts is nonetheless a critical aspect of disaster governance. Local involvement potentially enables professional disaster managers to harness the capacities of existing societal structures. Thus, from the perspective of the Continuity, Coordination and Collaboration governance model, communities become part of disaster managers’ repertoire, since they often know how to resolve local problems more effectively than outsiders (Helsloot and Ruitenbergh 2004).

An important dynamic in disaster situations to consider in this respect is that citizens increasingly help themselves and inform each other through online platforms, generating a bottom-up information network (Majchrzak and More 2010; Roberts 2011). This provides important additional resources, but at the same time it creates a complex information ecology of layered and disconnected information streams. The dichotomy between Chaos, Command and Control, versus Continuity, Coordination and Collaboration is manifested both in the development of net-centric information platforms that inform internal command and control structures, and through the online self-help platforms in the coordination of emergent citizen responses (Roberts 2011). Many such initiatives rely on geo-located data captured in maps, which serve to interconnect emergent and official response information networks, while also

informing the common operational picture of official response agencies. This was for instance, clearly visible in the Haiti earthquake response, where such maps were used to inform the actions of formal, international response organizations (Meier 2013). However, the Haiti case also showed that governance is required to guide such actions and weave together response initiatives. Therefore, coordination during disaster response is increasingly found in the interconnection of networks of local citizens, NGOs, and governmental bodies. Thus, both governance modes of control and collaboration are simultaneously present during disaster response, yielding the question as to how disaster management operation can be governed in such a heterogeneous web of social stakeholders, including formal agencies and emergent citizen communities.

Methodology

We conducted an ethnographic field study (Hammersley and Atkinson 1995) to explore how the national disaster response, humanitarian community, and local emergent groups tried to organize the response in the aftermath of the April and May Nepal earthquakes. Our field visit took place four weeks after the second earthquake struck. We studied the response coordination practices between Nepal-based NGOs, non-local responding organizations (such as international NGOs, multilateral agencies), and between these organizations and the local communities. This was a crucial phase in the response, as we witnessed the transition from initial rescue and response to early recovery in the field.

We carried out fieldwork on site in Kathmandu and the Nuwakot and Rasuwa regions, in close collaboration with locally-based agencies, whereby we interviewed, observed and shadowed people involved in the response. In total, we interviewed 38 humanitarians active in the relief operation and spent four days amongst local communities in the regions of Rasuwa and Nuwakot. Most of the interviews were conducted in the capital city of Kathmandu. To interview a related but diverse set of respondents we used a snowballing approach initiated with our existing contacts at the UNOCHA and INGOs. These contacts included representatives of Oxfam Novib, Cordaid, and the World Food Program. We also extended our primary network by contacting humanitarians indicated through their LinkedIn profiles to be located in Nepal. This provided a first list of follow-up respondents in the local context, which we gradually expanded by asking them for further contacts. While these various organizations have different origins and backgrounds, in the context of this paper we will refer to them as ‘organization x representative’ as a means to respect their anonymity. In addition, we conformed to the guidelines of our faculty’s ethical review board on informed consent and the protection of our research participants.

We structured the interviews by way of a shared interview protocol around the topics of coordination, governance, local community involvement, and information management. During the research process we based our method on zooming in on the work practices of the humanitarian in the field, and zooming out on the tensions and characteristics of relief operations at the institutional level (as described by Nicolini

2009). This enabled us to capture the relation between the actual work practices in the field versus the way in which UNOCHA's coordination influenced the operations. We started each interview with a focus on decision processes that the respondent was involved with, thereby identifying the central focus of his or her work. Next, our focus shifted toward coordination with other NGOs, how they were able to reach the affected population, and their priorities in terms of the UN cluster system (food, shelter, health, sanitation, etc). In the final part of the interview we zoomed out towards the institutional context the actors worked in and how it affected their operation. During the interview we also explored the possibilities to join humanitarians on field missions, and where possible, joined them to observe and question them on-site.

Participative observations, therefore, formed a vital aspect of our fieldwork as a means to experience and verify our respondents' accounts. In this manner, we accompanied interviewees from two NGOs on two different field missions in the districts of Nuwakot and Rasuwa. Both field trips lasted two days. On location, we shadowed our respondents (as described by Yanow 2009) to observe their work practices with the local community leaders, local governmental actors and the other NGOs. This step was important because often people have difficulty reconstructing and articulating their work practices in a detailed manner unless they are in the process of doing it (Barley and Kunda 2001). During this process, we took field notes that later informed our analysis.

We transcribed the field notes and recorded interviews to be able to inform our analysis. The transcripts helped us to reconstruct the interactions we observed, informed our later interviews, and allowed us to check and strengthen our understanding of the situation. We analyzed interviews based on a narrative analysis, which enabled us to explore the interpretations the respondents gave to their actions, and the actions of others, as well as their organizational values (Gabriel 2000). During this process, we categorized important events, aspects and interactions (Corbin and Strauss 2008). Finally, we developed a white paper to explore what the data could tell us, which was verified and commented on by several interview respondents; yielding a member check as described by Yanow (2009).

Findings

Setting the Scene

During the first days of the response, the international humanitarian community and first responders, such as the army and the police forces, struggled to develop an accurate image of the devastation caused by the disaster. Consequently, the assessment of where aid was required continuously shifted as they got new information about remote areas. In the wake of this troubled start-up of the humanitarian response, the capacity for self-help of affected citizen communities became apparent. Online community structures emerged, organizing citizen responses by assessing aid reports and geotagging them on a map. Over the following weeks, the international community set up their regular cluster coordination system at national

level, local government bodies coordinated the response at sub-national level, and the humanitarian response took shape. In response to the enormous influx of foreign NGOs, the government of Nepal initially did not enforce the standard requirement that new NGOs register their presence and sign a contractual agreement to support government policies. Nevertheless, in order to regain control over the response a few months later, the government reinstated this requirement when it formally ended the relief phase of the response. Together these attempts to govern the response gradually changed the face of aid in the affected communities. In the following sections, we will zoom in on two of these governance processes. We will start by exploring how the grassroots initiative of Kathmandu Living Labs was gradually overwhelmed and pushed aside by the UN cluster system as a coordination mechanism. We continue our analyses with a second attempt of control, by zooming in on how the coordination between the NGOs was hampered by the fact that the Nepalese government formally changed the phase of the disaster from response to recovery.

Seeking Coordination: From (Online) Grassroots to International Coordination Mechanisms

In the first phase of the disaster response operation, the remoteness of some of the affected areas seriously limited the reach of relief efforts by first responders, such as the army, (military) police, and the humanitarian community. It left a void in which many affected communities struggled to survive without aid in the first week(s) after the earthquake. Local community responses attempted to fill this void. Volunteers of Kathmandu Living Labs responded by crowdsourcing information about local needs of the affected communities, and used a local hostel in Kathmandu, the “Yellow House”, as their base of operations (WIRED 2015). The platform they used was called QuakeMap, an open data platform that aimed to connect people affected by earthquakes with responding organizations. The affected citizens could report their requirements to the volunteers of Kathmandu Living Labs via a hotline, SMS or through an online form. Thousands of domestic and foreign digital volunteers came online to rapidly map aid requests on the maps using satellite imagery. The volunteers of Kathmandu Living Labs used this data to create crisis data reports, which categorized and processed about 2000 aid requests. The volunteers of Kathmandu Living Lab structured the emergent community response through an online platform and verification procedure.

“Within three weeks something like six thousand volunteers came online from all over the world and really mapped, really thoroughly, the areas outside Kathmandu. When a report was filed on QuakeMap people said they have certain needs. On the comment section of that particular report, one of the responding organizations could report that they have reached this place in this date and they had given so and so to these many households in that place. And

then as part of our verification process we called back contacts and asked them if all their needs had been met, because that's when we close the report".

Kathmandu Living Labs Representative

Once a request was filed, the volunteers of Kathmandu Living Labs reached out to national response organizations like the Nepalese Red Cross, Nepal Police, and Nepal Army in order to get them to provide the relief materials. This shows how the national response networks became connected during the response.

"So with Kathmandu Living Labs there was a group of people that were here that had pre-existing connections to the government, and other organizations were very familiar them. They were able to play kind of a link between the global community and the local users. And so there were a lot of phone calls and a lot of emails going back and forth between Kathmandu Living Labs, Nepal Army, Nepal Police as well as Nepal Red Cross."

Kathmandu Living Labs representative

In that respect, the QuakeMap initiative functioned as a web 2.0 platform to connect the reports from the citizens and relief items from formal response organizations. The result was a quite sophisticated relief system that bridged both the community and formal response. Soon different roles and functions were created in the Kathmandu Living Labs team to process and follow up on all requests.

"Our approval team would go through the initial report to check the geolocation accuracy and categorize the reports based on the needs stated. Once that particular reports gets approved it becomes publicly available, on quakemap.org. Then we need to constantly keep on verifying that the needs which were originally stated are still up to date. So we have a verification team who will periodically call these contact numbers mentioned on the reports and ask them for what's their current situation? Based on their conversation they add comments to the report. Later down the line we developed a system which whenever we add a comment everybody involved will get automated SMS notification."

Kathmandu Living Labs representative

During the first weeks after the second earthquake, we saw that the relief operation by the international community started to take shape. In the immediate aftermath of the disaster, a number of other formal coordination mechanisms became activated, including the UNOCHA cluster system. In the UNOCHA cluster system each cluster focused on a different top-level area of humanitarian importance, such as health and shelter. Soon humanitarian organizations identified suitable partners to work with through the UNOCHA cluster system – as well as through their own established networks. The clusters started functioning as points of contact for different

international humanitarian actors working in these fields. It also provided a clear physical and virtual space to get together, learn about each other's plans and activities and potentially partner or coordinate their activities.

In addition to the UN system, other formal mechanisms existed in Nepal to facilitate coordination, such as the NGO federation of Nepal, which has local branches or 'chapters' and brings together both national and international NGOs working in the same geographic area. At the local level, government run District Disaster Response Committees started coordination between the work of different humanitarian actors. As a consequence of the attention to the formal mechanisms, the community response itself was taken for granted.

“Well, as you know OCHA is not an implementing partner, very rarely in the first few days will I engage with affected communities. In the initial days, I spend an extraordinary amount of time setting up the coordination mechanism.”

UNOCHA Representative

The community response in the early days of the disaster was too volatile and difficult to grasp for the formal coordination mechanisms.

“In the early days, you would have volunteers from Kathmandu Living Labs search and do that. This is a really inspiring response from the volunteerism and the online communities. For the first time, I have seen thousands of contributors domestically during a response, as opposed to other responses like in the Philippines lots of people used social media were not actively being part of the response. More internationals do the mining and support and help filter 10.000s or 100.000s of tweets. Many of those guys were doing it here in country. The international community probably didn't capture that quickly enough, or early enough. This engagement with truckloads of youths and guys going out with their own stuff. Uploading where they have been, where they have dropped stuff off. That was coordination at grassroots level and we just didn't and couldn't get that in. It was just too much. Without them having a coordination system amongst themselves you got too many actors. Then you will have to spend your entire time coordinating, not delivering. It is a tough one. But it was inspiring, you know, Yellow House”.

UNOCHA Representative

As the formal mechanisms kicked in and the international aid coordination mechanisms started functioning, they gradually pushed out grassroots coordination initiatives like Kathmandu Living Labs. After a couple of weeks, when the international organizations had their own information systems up and running, Kathmandu Living Labs was no longer seen as valuable for the official response.

Important grassroots initiatives like this were effectively pushed out and neutralized by coordination mechanisms of the humanitarian relief agencies.

“That grassroots community is very helpful for in the first few weeks, like I said with the evolution of the needs. Within the first few weeks, there is a lot of room for a lot of different kinds of information products. That is when the standby partners play a role with their online communities. But as you move into the disaster, that role kind of diminishes for them to provide support. When you think about the online community, I don't really see a need for them unless I can task them for a specific need”.

UNOCHA Representative

Seeking Control: From Relief to Recovery Mechanisms

During our visit to Nepal, we found that one of the most radical changes in the earthquake response that affected the humanitarian community as a whole had been the decision by the government to move from the relief phase to the recovery phase. Two months after the second earthquake, the government of Nepal decided to formally shift the phase of the humanitarian response from ‘relief’ to ‘recovery’. As part of this move, they ended the duty free period for humanitarian goods. This greatly influenced what and how much NGOs could import and therefore what they could do in their efforts to respond to the crisis. We found that this decision directly affected the on-going response operations. The rationale for this decision issued by government of Nepal was that it was necessary to establish an overview of the number of INGOs active in the country (dozens had come in without registering), and it allowed them to monitor their activities and make sure INGOs were acting in an accountable manner. However, many humanitarians felt that the government’s attempt for control limited their ability to act:

“Very soon we start talking about long term. Sometimes too soon, because now the government said: relief is over, it is now all about reconstruction. That has a huge implication. For instance, they are not allowing importation of goods that are relief goods, because we are not in relief phase anymore. But people are going back, the monsoon is coming; they need waterproof support. They are extremely resilient, but that minimum input that needs to be there. The winter is coming. So it is that sequence, the calendar, and the weather. It is just very complicated. In any, any country you never see the housing reconstruction start less than one year after the disaster.”

IOM representative

While seemingly neutral, the decision to move from relief to recovery signalled a new disaster policy landscape, in which different priorities are set and different support is given. At the time the humanitarian response still focused on the

distribution of relief materials, prioritizing the provision of shelter, food and safe water to the affected communities. In addition to the government's attempt to monitor the actions of INGOs, this decision to move to recovery was also taken to regain sovereign control over important socio-economic developments that were taking place in the country. The government had previously requested that all aid gifted to the country be channelled into a Prime Minister's Relief Fund so as to be able to manage these resources and ensure that they were used to support – and not to counter – Nepal's national relief and development priorities. Moreover, local news media suggested that over 100 new INGOs entered the country in the weeks after the disaster struck, of which only 14 registered, causing issues with accountability, local market protection, and the government's grip on the relief efforts (The Himalayan Times, 23 June 2015). However, international humanitarian organizations are accountable to their own donors and as such need to control their funds. Therefore, they could not comply with this request.

“We respond to an appeal by the government, and that means that the government needs to be in the loop. Quite soon the government came and showed that they have that responsibility for the population and they want to take up that responsibility. The way that they wanted to do it was of course the question, because they created this Prime Minister's Relief Fund. They were hoping that all the donors would put their money there and they would do all the operations. And that did not work out because that is not how it always works in the emergency relief context. It's many organizations that use own funds.”

INGO representative

When the government officially announced the end of the relief phase it also ended the duty free period for a specified list of humanitarian goods. The reason the government gave for reintroducing these taxes was the alleged misuse of the tax-free status of humanitarian relief materials by corporations and humanitarian organizations. The Nepalese phone company Ncell, for example, was found guilty of importing telecom equipment from China in boxes stamped with the Red Cross logo, evading Rs10.1 million in tax. The company later acknowledged its fault and paid the outstanding import duty in full.

“Initially, there was nothing, everything was allowed to clear. But later on, some elements did misuse of relief materials. In the name of relief materials they started importing so many other things what is not required for the relief. In response the government started to collect tax on a lot of things, and after that it became very, very difficult.”

INGO Representative

The effects of the government's decision had the most impact on the delivery of international aid to the remote communities. At the time the government announced the official shift from the relief to the recovery phase, some remote communities had not yet received much aid or assistance to help them prepare for the monsoons that were imminent. Many humanitarians saw the reinstatement of taxes on relief goods as a major obstacle. They felt that it undermined their speed and effectiveness and thus significantly slowed down the ongoing response operations. They saw this as especially troublesome because the recent earthquakes in Nepal had had their greatest impact in these more remote rural areas, not in the relatively easy to reach the area of the Kathmandu valley. Reaching these remote communities constituted one of the greatest logistical challenges during this disaster. The government's quest for control by reinstating taxes on relief goods actually made reaching these communities more difficult.

“Customs is probably the number one challenge of the humanitarian community at the moment. Because of the taxes and the delays at the borders and the airport of getting goods in but also having to pay duty and import duty on humanitarian goods, which should be free of that. So that is a big challenge. There have been countless meetings with government agencies to try to get that resolved. Although the government is saying the response is over the humanitarian community are very, very worried that the needs have not been met. There is a big need out there for shelter and a lot of other things. Many people haven't got anything yet, because they are so remote.”

UNOCHA representative

In addition to the reasons outlined above, the government further justified its decision to change the formal phase of the response – and end the duty free period for humanitarian goods – on the basis of a well-established narrative about the resilience of local communities in Nepal. The government expressed the concern that Nepal's highly resilient communities might become ‘corrupted’ by external aid, lose their self-reliance and become dependent on external assistance. To harness the resilience of local communities, the government's message for the people of Nepal was to go back to normal and start picking up their lives again.

“The government is very conscious about trying to get back to business as usual and have the rebuilding start. What they are saying is that they don't want people to become dependent on aid, which is a valid point. So they want the people that are in tent cities here to go back to their region, and have shelter there and get back to farming and back to being self-sufficient. They want to avoid reliance on aid. Also they don't want the marketplace flooded with a lot of imported material.”

UNOCHA representative

When we visited Nepal, we saw signs of resilience in both the urban area of Kathmandu as well as the more remote areas of Rasuwa and Nuwakot. For example, we saw that in some remote villages in Rasuwa people had not waited for external aid to arrive but had instead started to rebuild their houses and construct temporary shelters using materials salvaged from collapsed structures and CGI (corrugated galvanized iron) sheets from earlier humanitarian operations in the area. From our informal conversations with the local people there we learned that frequent floods and landslides had taught people to rely on their own ingenuity and skills when faced with very challenging circumstances.

“The people do not sit idle in those places. They indeed cannot longer wait for the agencies to come and bring the CGI sheets. So whichever the timber or the CGI, they will use it. They already made the temporary shelter, which is fine for us. So in that case the government is also encouraging them to make the houses. That is fine.”

INGO representative

As such, humanitarians felt that the reinstatement of import tax on relief items significantly restricted how much – and how quickly – they could act in order to address these needs. In this case the government purposefully used its power to frame the legal and policy context and restrict what humanitarian agencies could do in an attempt to gain the lead in the humanitarian response efforts.

Discussion and Conclusion

Transcending the Dichotomy, Towards Net-Centric Disaster Governance

In the Nepal earthquake relief operation, we witnessed instances where useful emergent grassroots initiatives were pushed aside and how the government sought to establish control over the activities of INGOs. Our analysis manifested elements of Command and Control, as well as Coordination and Collaboration. In the first case, we identified how the remarkable capacity of emergent (online) groups to build a grassroots aid distribution system was pushed aside by the dominance of the official UN cluster coordination system. In the second case, we saw how the relief operation driven by INGOs was hindered by the quest for control over the humanitarian response by the Nepalese government. Both cases thus show how emergent and official coordination attempts were hampered by attempts to structure and control the relief operation. This dynamic shows that the dichotomy between the two ideal-type disaster governance models is less clear than in practice than theory suggests.

Instead, disaster governance is increasingly characterized by heterogeneous networks that are often supported by various information systems and products to keep an overview of the unfolding response operation. In our study, this was visible both through the use of QuakeMaps as an emergent online platform of the Kathmandu

Living Labs, and the online platforms of the international humanitarian community on which maps were shared, such as reliefweb.int and mapaction.org, which supported and guided coordination in the UN cluster system.

These developments require a rethinking of the way in which acting coordinators are linked together. To inform this discussion, we can now reflect on UNOCHA as a ‘network administrative organization’ (Provan and Kenis 2008) in action during the Nepal disaster relief efforts. This specific mode of network governance is not unproblematic as we have seen in our case material, because facilitating citizen representation in cluster meetings was a major challenge. This is in line with Stumpfenhorst et al. (2011), who also noted this issue during the complex earthquake response of Haiti.

Indeed, our study suggests that the coordination of humanitarian relief efforts can only be effective when the majority of locally active NGOs participate. This involves being present in, and actively contributing to cluster meetings, which are often held daily. Without such participation, the cluster system risks creating a divide between on the one hand diplomatically-oriented coordination amongst dominant INGOs and the national government, and on the other hand locally active (I)NGOs, who are often smaller in size yet larger in number. In fact, in the case of Nepal, coordination difficulties amongst INGOs entering the country was – due to their sheer numbers – one of the important triggers for the Nepalese national government to start influencing and controlling response operations, by framing the phase of the relief operation as one of recovery and reconstruction. What we thus witness in the governance of the humanitarian network is that network participation in the cluster platform of UNOCHA both enables and constrains coordination efforts between NGOs.

Reverting to our initial argument, we see that what matters most in these types of network governance is the type of platform that connects all stakeholders. Yet, what makes it difficult to govern these networks is that there is not one platform that brings together all stakeholders, but in fact, the actual networked coordination process is far more distributed. In both our empirical cases, various NGOs acted outside the UNOCHA system, whereby the Kathmandu Living Lab case showed how the online platform was shaped by the emergent community as a means toward contributing and leveraging information (in a manner explained by Roberts 2011). This initiative provided important additional resources, but at the same time created a complex information ecology of layered information streams. To guide such actions and weave together numerous response initiatives within this polycentric networking process, there is a need for a different governance concept.

We, therefore, establish that the concept of ‘network governance’ insufficiently captures the existence of multiple, concurrent platforms. These platforms form multiple structural cores that are sometimes but not always interconnected, and around which heterogeneous stakeholders interact (see also: Mulder et al. 2016). The ‘polycentric’ nature of the structure calls for an adaptive type of network governance, extending beyond centralized or participant governed, as suggested by Provan and Kenis (2008). We suggest that this type of adaptive network governance is captured in the concept of ‘net-centric governance’ (Boersma et al. 2014b, Boersma et al. 2012).

We perceive this as an opportunity for a new spectrum of self-organized governance, because interaction on platforms makes actions and actors visible, allowing quick traces of information to be shared (Majchrzak and More 2010; O'Mahony and Bechky 2008). In this respect, information sharing platforms can be used both to structure responding community efforts, and to inform command and control processes of existing response organizations.

We define net-centric governance as the process whereby self-directed networks of heterogeneous stakeholders are connected within an environment that is enabled by shared technological and organizational infrastructure (in line with Abrams and Mark 2007). 'Net-centric' acknowledges that local and international communities increasingly generate responses around different network hubs, across a number of networks simultaneously – including online platforms – and that the inclusion of these networks and platforms can strengthen the reliability and legitimacy of relief responses. We position net-centric governance in the broader context of interconnected heterogeneous networks, recognizing that social systems comprise more than one relevant network (Castells 1996). Further, it is an adaptive way of dealing with a polycentric, interconnected world, based on an understanding and leveraging of the (concentrated or distributed) governance mechanisms of each of the relevant networks, but in concert with one another. As such, we propose that net-centric governance is the next generation of network governance (Provan and Kenis 2008).

In conclusion, we emphasize that the conceptual dichotomy between Chaos, Command and Control, versus Continuity, Coordination and Collaboration governance models in practice is less clear than sometimes suggested. We witnessed that both formal response and emergent networks engage in attempts to control and collaborate simultaneously. Thus, disaster governance is increasingly found in interconnecting networks of local citizens, NGOs, and governmental bodies. Therefore, to better understand this dynamic, a net-centric governance approach to disaster relief can help understand how to transcend the dichotomy of control and collaboration, and yield more responsive efforts to future disasters.

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