Enduring Cooperation: Time, Discipline, and Minga Practice in Disaster-induced Displacement and Resettlement in the Ecuadorian Andes

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This paper presents a study of an Andean form of cooperation, the *minga*, in a disaster-affected community and a disaster-induced resettlement—both due to volcanic eruption—in the Andean highlands of Ecuador. I explore factors affecting the continuity of minga practice post disaster and reveal some of the largely temporal tensions between wage labor and minga practice. However, I argue that much of the variation in inter-household minga participation was due to interventions by the state and NGOs and how these organizations structured the labor and temporal organization of mingas as a form of discipline. I further find that this dynamic is an extension of the historical role mingas have played in domination and local agency and highlight how this has important implications for disaster recovery at the household and community levels and for disaster relief and resettlement policy and practice.

Key words: cooperation, resettlement, disaster, NGOs, Ecuador

Introduction

Disasters and resettlement involve varying types and degrees of loss, isolation, and impoverishment and of change in patterns of individual and group access to resources, institutions, and services that compel people to confront all manner of scarcity in constrained but often creative ways. In times of such crises, people often rely on informal social networks of reciprocity and mutual aid as they cope with immediate response imperatives and work towards recovery and adapting to the new conditions in the wake of disaster, displacement, and resettlement (Faas et al. 2015; Jones and Faas 2016). Disaster and resettlement also thrust those affected into contact—novel or amplified—with a bevy of formal organizations promising aid and recovery. The operations of these supralocal organizations often disrupt local networks and adaptive practices and, whether the consequence of activism, experience, or formal after-action review, humanitarian organizations have become increasingly aware of the merits of realizing operational objectives in culturally-sensitive coordination with local efforts (Faas 2017; Faas et al. 2016). This calls anthropological attention both to the persistent question of how social support networks survive risks inherent in disasters and resettlement (Faas 2015) and to the matter of how these practices are transformed when they become globalized as extensions of state and multinational processes of disaster mitigation, resettlement, and development. This study investigates an Andean form of cooperation, the *minga*, and environmental, economic, and institutional factors affecting the continuity of the practice in disaster-induced resettlement settings among people displaced by eruptions of Mt. Tungurahua in the highlands of Ecuador. In so doing, I call attention to minga practice as a critical intersection of local, adaptive practices, and the imperatives of supralocal humanitarian organizations.

Devastating eruptions of Mt. Tungurahua in 1999 and 2006 resulted in the evacuation and partial destruction of villages on the southern and western flanks of the volcano. The destruction was primarily concentrated in the northern parishes of Penipe Municipality in the highland province of Chimborazo, among primarily mestizo smallholders, chiefly engaged in small-scale subsistence agriculture and animal husbandry. Ashfall, pyroclastic flows, lahars, and incandescent material affected roughly 650,000 people in Tungurahua and Chimborazo provinces. The 2006 events resulted in six fatalities and many injuries and subsequent illnesses; homes, crops, and animals were lost; soils were degraded; and fruit trees were desiccated by volcanic ash. Thousands were left displaced and languishing in shelters—many for several years—while others migrated to cities near and far in search of new livelihoods.

In late 2007 and early 2008, the Ecuadorian Ministry of Urban Development and Housing (MIDUVI) and two

nongovernmental organizations (NGOs) constructed six re-settlements for those displaced by the eruptions. This study began in two of these resettlements and later expanded to villages in the risk zone, where resettlers gradually returned to work their land. MIDUVI constructed one resettlement, Penipe Nuevo,[1] consisting of 185 homes arranged on a land-less urban grid as an extension of the peri-urban municipal center of Penipe. Alongside these homes, the United States-based, Christian Evangelical disaster-relief organization, Samaritan's Purse, built an additional 102 homes. The combined landless resettlement effectively tripled the total population of Penipe Township. Roughly 5 km to the southeast, the Ecuadorian nonprofit Fundación Esquel constructed forty-five homes in a hilltop resettlement that came to be called Pusuca that, unlike the peri-urban resettlement in Penipe, included a little over a half-hectare of land for each household plus additional plots for communal use.

These resettlements and the evacuated villages to which resettlers returned to cultivate each entailed unique combinations of ecological, economic, ideological, and political/administrative dynamics that influenced minga practice in disaster recovery. Here, I explore factors influencing the continuity of minga practice. Drawing on theory and evidence from economic and Andeanist anthropology, I expected minga practice to be negatively affected by post-disaster displacement and the diversification of household economic strategies (e.g., increased wage labor). However, several studies of disaster recovery and resettlement also point to the ways interventions of the state and NGOs tend to impose new organizational constraints on resettler livelihoods and minga practice. In this article, I reveal some of the largely temporal tensions between wage labor and minga practice; however, I argue that much of the variation in inter-household participation in cooperative practices was due to interventions by the state and NGOs and how they structured the labor and temporal organization of cooperation as a form of discipline. I further find that this dynamic is an extension of the historical role mingas have played in domination and local agency and highlight how this has important implications for disaster recovery at the household and community levels and for disaster relief and resettlement policy and practice.

Methodology

This study is based on ethnographic fieldwork carried out for eleven months in 2009 and six months in 2011 in three principal sites around Mt. Tungurahua in the central highlands of Ecuador: (1) Penipe Nuevo, the landless peri-urban resettlement of 287 homes constructed in the municipal center of Penipe by MIDUVI and Samaritan's Purse; (2) Pusuca, a smaller rural resettlement with forty-five homes and arable land for each, constructed by the Ecuadorian nonprofit Fundación Esquel; and (3) Manzano, an evacuated village of fifty-two households at the foot of Mt. Tungurahua to which resettlers—lacking land and resources in Penipe Nuevo—returned to cultivate and raise animals.

My examination of the continuity of minga practice focused on the extent to which participation would be disrupted by diversifying household economic strategies and the management of minga practice by village leaders and disaster relief and resettlement organizations. To examine these processes, I developed a mixed-method research design aimed at capturing variation through the recursive discovery and corroboration of analytical domains and the evaluation of my core research questions. I lived in Penipe and participated in daily life in all three sites over the course of fieldwork. Fieldwork included participation in dozens of mingas and village council meetings and ethnographic interviews with villagers, local leaders, and representatives of government agencies and NGOs operating locally. I also made extensive use of local and regional archives to historically contextualize ethnographic evidence.

I complemented my ethnographic approach with quantitative data collection and analysis to test the degree to which minga participation was affected by household wage employment. Minga organizers are notorious list makers who keep detailed attendance records of all minga participants (Colloredo-Mansfeld 2009), and they shared their lists with me in Manzano and Pusuca for all mingas from 2009-2011. In interviews with members of each household in each site—all forty occupied homes in Pusuca and all fifty-two occupied homes in Manzano—I elicited information on the occupations of all adult members of the household.

Cooperation and Reciprocity in Disaster-induced Resettlements in the Andes

The displacement of the resources of subsistence agricultural production by disaster and integration into capitalist economies are both theoretically and empirically associated with the dissolution of Andean cultural practices. Disasters and displacement frequently entail the partial or complete destruction or loss of land and agricultural resources, often resulting in a diversification of household economic strategies and increasing the likelihood of a transition (at least temporarily) from primary production to wage labor (Companion 2015; Marino and Lazrus 2015; Nayak 2000). Such changes can have significant consequences for the restoration or improvement of livelihoods, particularly in terms of social organization and traditional practices of reciprocity and cooperation that are often associated with effective recovery. In the early decades of the 21st century, the displacement of subsistence resources by climate change, development, disasters, and environmental degradation continues to endanger the moral economies of Andean reciprocity and cooperative labor (e.g., Wutich 2007). It is therefore critical to examine how such political ecological processes come to bear on local practice and the ways in which local actors exercise agency in the context of such pressures.

The people of Penipe are primarily mestizo smallholding subsistence agriculturalists with a historically marginal direct involvement in wage labor and global capitalism,

though many sell small portions of their crops at local markets. Local cultivars—heavily dependent on irrigation—are primarily corn, beans, potatoes, and, to a lesser extent, peas, tree tomatoes, blackberries, and fruit trees (apple, pear, peach, and plum). Locals also raise cattle, pigs, guinea pigs (*cuyes*), chickens, and rabbits. Because agricultural labor demands periodically and seasonally exceed household labor capacities, Penipeños have historically relied upon traditions of reciprocity and cooperation to meet these demands. There are dyadic traditions of reciprocity such as *randipak* (though often mobilized in small groups) in which kin or neighbors engage in labor exchange for work on each other's land. As throughout the Andean region, villagers also practice *minga*—the mobilization of social labor by means of often complex systems of reciprocity and local governance. Minga practice has historically taken different forms (Faas 2015) and is often reported as a dyadic practice of exchange labor or feasting carried out in groups on household farms (Chibnik and De Jong 1989), similar to what locals refer to as *randipak* in Penipe. By the late 20th century, mingas in Penipe came to be chiefly organized by village councils to manage and maintain local common resources (irrigation, potable water, roads, etc.) The practice was adapted to formalize rules for maintaining good community standing based on household attendance credits (*rayas*), resource inclusion/exclusion (e.g., irrigation), and to attract the attention of the state and NGOs by demonstrating community organization (Faas n.d.).

Reciprocity, kinship, and communal labor are core domains of Andean economic and cultural practice (Mayer 2005). Though the history of minga cooperative labor parties is complex, and they are creatively applied in diverse contexts, the practice is historically rooted in the social organization of subsistence agriculture in the Andean highlands, where the periodic necessity of recruiting labor outside the household fostered the development of reciprocal exchange practices and the coordination of social labor through cooperation (McEwan 2006). Ecological variables such as drought, erosion, or, in the present case, volcanic activity, that periodically affect households' abilities to meet subsistence needs are additional incentives for practices of mutual aid and cooperation (Mayer 2005; Mitchell 1991). Such practices are so pervasive throughout the Andes that the Quechua terms *ayni* (dyadic reciprocal exchange) and minga are invoked by Andean peoples to mobilize resistance to neoliberal capitalism, state intrusions, and multinational development organizations by contrasting the virtues of mutual aid in Andean culture with the perceived greed and impersonal exploitation of capitalism (Colloredo-Mansfeld 2009; Mayer 2005; Taussig 1980).

In the 1970s, anthropologists grew concerned with the erosion of Andean cultural practices of reciprocity, cooperation, and community organization by the encroachment of capitalism and private property in the wake of agrarian reforms (Chiriboga 1988; Farga and Almeida 1981; Martínez 1984). Though reforms broke up remnants of the hacienda system by dissolving large landholdings and making lands available to indigenous peoples and campesinos,[2] many were unable to obtain land and consequently joined the growing population of landless, unskilled laborers, as they were thrust from primary production into wage labor (see Greaves 1972). The consequences of such sweeping change were well-documented. In the wake of the monetization of rural economies in Peru in the 1970s, Carmen Diana Deere (1990) noted a transition to paid labor over minga reciprocity. Both Deere (1990) and Enrique Mayer (2002) found that the wealthy often avoided reciprocating minga labor because they hosted too many laborers at once to return the labor themselves and instead reciprocated with feasting or cash payments. William Mitchell (1991) found that paid labor had marginalized minga practice, although it endured as an alternative to the dispersal of limited cash reserves, on the one hand, and the provision of labor for wages of meager purchasing power on the other. And Eric Jones (2003) found that the transition to wage labor in rural Ecuadorian villages facilitated the development of social networks with more homogenous class compositions, which he attributed primarily to decreased reliance on reciprocal relations for resources by wage laborers or constraints on their ability to continue meeting community obligations. And yet, these studies lack a clear explanation of the particular processes that produce this tension between minga practice and wage employment. Moreover, here we must also consider the dynamics of post-disaster and resettlement contexts.

In the case of the Penipe resettlement, the practice of minga cooperative labor effectively came to an end shortly after homes were occupied. Though minga was a key component of the resettlement strategy itself, the reasons for the decline were rather straightforward. Samaritan's Purse constructed homes and a community park by organizing resettlers into mingas and having them work alongside hired contractors (MIDUVI used only hired labor); at least one member of each beneficiary household was required to work on construction each day. Yet, in the absence of common and productive resources, minga practice did not continue in Penipe (Faas 2015). A popular local explanation for the decline of minga practice in Penipe was that outside organizations providing handouts in exchange for minga participation destroyed minga culture; however, my observations do not support this claim. State-led minga organizing dates at least to the Inca Empire, continued during the colonial era and hacienda economy, and NGOs have worked with mingas since at least the 1960s, a topic I return to below. However, locally organized mingas were typically organized around work on the commons and public works. Irrigation canals, of course, are only necessary where there is agricultural production, and work on potable water systems is not necessary where it is handled by an urban grid, as in the Penipe resettlement. Yet in 2009, as Mt. Tungurahua entered a phase of relative calm, Penipe resettlers took advantage of the diminished volcanic activity to begin cultivating on their lands in the high risk zone—where chronic volcanic ashfall degraded the soil and continued to present health and safety risks to people and livestock—often returning to the resettlements only at night. The claim that

minga culture had declined among resettlers was belied by the fact that mingas resumed in earnest in the risk zone, as people sought to repair infrastructure and commons such as irrigation and potable water systems, which led me to examine minga practice in the Manzano village as part of this study (see Faas 2015). In the following section, I examine the rather more complex relationship between inter-household variation in minga participation and wage employment in Manzano and the resettlement in Pusuca.

Wage Labor, Displacement, and Minga Practice

In the interim period between 1999, when the first eruptions of Mt. Tungurahua initially displaced many of the resettlers, and 2008, when the resettlements were constructed, many households affected by the eruptions began seeking alternatives to subsistence agriculture, often pursuing local wage employment (primarily construction, factory, or agricultural jobs) or migrating to more distant cities in search of work. Most considered such work a temporary measure and intended to return to cultivate once the volcano subsided or, in the case of resettlers in Pusuca, once they could begin planting on their new lands.

However, many found the transition quite challenging. Soils in Manzano were still overwhelmed with volcanic ash, which continued to fall in moderate quantities somewhat regularly and reduced the productive capacity of the soil. Irrigation canals too were severely damaged by ashfall, which prevented the flow of water to Manzano entirely. Regina,[3] the secretary of the Manzano village council, explained, "The water of the irrigation canal only reaches the high part [the eastern extension, away from Manzano], yet we all work and do not have the benefit for our lands."

In Pusuca, resettlers were granted forested lands from state holdings that were quite difficult to colonize, and they too were without irrigation at the time of research. When I asked Jaime, an elderly resettler, how he benefited from minga labor, he explained that it was hard for him to leave his job in nearby Riobamba to commit to Pusuca full time, "Now there is no [irrigation] water and nothing to irrigate. It's dry, dead earth and nothing more. Once there is water, I will benefit." All of this meant that, although most were interested in transitioning back to primary production, many were at the time unable to forego wage employment, as they had yet to achieve subsistence-level productivity on their lands, and production for market was still a long way off.

Survey data on adult occupations per household enabled me to calculate percentages of household involvement in wage labor and perform simple non-parametric correlations (Spearman's rho) with household minga participation using minga attendance records.[4] In Manzano, there was no significant correlation between percent household wage employment and minga participation, while in Pusuca, results showed a significant negative correlation with minga participation and percent of employed adults per household ($r = -.496$, $p<.001$). Villagers in both sites explained why

they were at least periodically unable to participate in mingas. In Pusuca, the primary reasons provided by respondents for not participating in mingas were wage employment and distance between work and community. Fernanda, a single mother in Pusuca explained, "I'm single, and I work outside the community, and if I go [to the minga], then there is no one who can work for my family." In Manzano, respondents from several households shared similar stories. According to Miguel, "Lamentably, my work situation does not permit me to be present in many mingas." Some said they were unable to work at times because of advanced age, health reasons, or childcare responsibilities. Farm work was mentioned only rarely as interfering with minga participation in Manzano and Pusuca.

The primary reason provided by more than a dozen respondents in Manzano for not participating in mingas was exclusion by village leadership. Martina, a middle-aged single mother originally from Manzano who, like most villagers, lived in the Penipe resettlement, explained:

> The leaders today have been on the village council for decades, and they prefer to manipulate projects for their benefit, while keeping us out. They excluded my mother and sisters and I because we were too poor to always be there when ordered. They kept us from receiving roofing from MIDUVI after the eruptions, and now they do not even invite me to mingas.

Though Martina's story was the most extreme claim of exclusion I encountered, several households were routinely ignored and simply not invited to mingas. Others were more pointedly excluded because of political feuds in the village. Resources accessed through minga labor (e.g., water rights, relief, and project aid) tended to be concentrated within the core group of minga laborers and village council loyalists. In Manzano, minga recruitment was largely underwritten by dyadic, rather than collective, relations (Faas n.d.). Although the stated principles of minga organization were nearly identical to those in Pusuca—equal access to collective resources for equal labor contributions—those who did not maintain strong reciprocal relations with village leadership were often excluded from village affairs (see Faas 2015). However, it is important to note that exclusion (or the promise thereof) is frequently a means of producing human commons in minga practice (and other civil and religious cargo systems throughout Latin America). It is a common tactic for enforcing conformity with community norms and not necessarily evidence of malice.

Post-disaster Temporal Regimes: Expert Practice and Formalization

That wage employment was a significant variable in minga participation in Pusuca, but not in Manzano, is potentially explained by the practical and theoretical tension between contending relationships to time; between a laborer's own time and that which is owed to employer and collective

obligations. E.P. Thompson (1967) argued that harnessing the clock and claiming laborers' time was as responsible for the success of capitalism in Europe as harnessing mechanical power in the Industrial Revolution. Time management for subsistence agriculture is generally a matter of task orientation with work periods expanding and contracting according to a given task. The task-oriented work of smallholding campesinos in Ecuador is usually managed at the household level and only periodically requires the flexible coordination of inter-household cooperation in mingas (Salz 1984); time sensitive household agricultural tasks are rare, making it possible to fulfill requests for labor from neighbors. Wage employment can encroach upon this flexibility because it generally requires the coordination of efforts using the abstract management of time and, importantly, employers (not laborers) are the arbiters of this time. However, capitalist and subsistence agricultural temporal regimes are not necessarily mutually exclusive, tensions between them are not fundamentally immitigable, and adaptations are well-documented. For example, in Manning Nash's (1967) classic ethnography of factory work in a Maya community in Guatemala, work schedules accommodated traditional holidays and obligations, such as preparing for fiestas, and four-hour gaps between shifts allowed workers to tend to agricultural and childcare responsibilities.

Wage labor and agricultural orientations to time are not discretely bounded entities, but specific relations and practices can produce and augment sub-acute tensions between them. In resettlement settings, we not only encounter contending spheres of economic strategy and social organization but contending systems of policy and practice among communities, the state, and NGOs. Some expect such tensions will be resolved as a natural course of events. Ted Downing and Carmen Garcia-Downing (2009) describe resettlement as a process of transition where antecedent routine culture is replaced by a dissonant culture that *temporarily* reorders time, space, and relationships before emerging into a new routine culture. However, in his studies of disaster-induced resettlements in Honduras (2014) and Mexico (2015), and post-Katrina New Orleans (2011), Roberto Barrios found that spatio-temporal re-orderings were more abiding and created path-dependencies that wrested control of the construction of space and the management of time from local actors and remade them in the image of neoliberal capitalist ideals, including the nine-to-five clock.

Though well-meaning experts working for NGOs attempted to work with local communities by adopting minga practice as a core element in resettlement construction and administration, the practice was disembedded from local contexts and re-embedded in expert imagination, resulting in important adjustments to the practice. Like Samaritan's Purse, Esquel also required resettlers to participate in mingas in the construction of the Pusuca resettlement. Fundación Esquel submitted the Pusuca resettlement plan to regional authorities within weeks of the 2006 eruptions. It focused on developing a sustainable community of agriculturalists producing surpluses for regional markets. Importantly, they were focused on issues of empowerment and cultural sensitivity. Community participation and minga practice formed cornerstones of their implementation strategy, and the plan emphasized community participation in all phases "in order to ensure an effective contribution and subsequent empowerment of the project." Esquel organized more than a dozen beneficiary mingas to clear brush and timber, build temporary structures, and dig trenches, while hired contractors built the houses. Once construction was completed, Esquel secured additional funding from a coterie of third party funders for additional development projects—greenhouses for organically produced fruits and vegetables, potable water, and a 6 km irrigation canal, to name a few—all of which entailed in-kind contributions of minga labor from resettlers. Rather suddenly, mingas were more frequent than they had been in area villages in recent memory—now weekly rather than monthly—and becoming increasingly formalized according to rules advocated by Esquel and ratified by the village council.

Cooperation Time: The Discipline of Minga Practice

Experts working for state agencies and NGOs (however well-meaning) can and often do exacerbate vulnerabilities and (re)produce inequalities in response and recovery efforts by marginalizing local knowledge and capacities in favor of their own expertise (e.g., Gamburd 2013; Marchezini 2015; Zhang 2016). At times, even sincere efforts of culturally sensitive humanitarian action fail because experts misread local culture as homogenous, scripted, and uncontested, and expect that local practices can be readily appropriated for organizational objectives (Faas and Barrios 2015; Maldonado 2016). The appropriation of local practices to realize organizational goals can facilitate the internalization of dominant ideologies; people may come to invoke local values in ways that nonetheless articulate with dominant interests and thereby police themselves based on expert rules of conduct. Thus, on another level, politically charged "metafunctions of humanitarian action" serve as puissant conduits of dominant ideologies and practices (Donini 2008); experts impose the rationalities of organizational priorities, manage populations, and distinguish the deserving from the undeserving (Faas n.d.; Gamburd 2013; Marchezini 2015; Zhang 2016).

Village governance and NGO regulations imposed specific parameters for household minga participation; therefore, minga practice in Manzano and Pusuca exhibited several important similarities and contrasts. Beginning in mid-2009, Manzano village council leaders—led by Bernardo, the village president re-elected every two years since the 1999 eruptions—began anew to organize mingas for projects including building repair, irrigation, potable water, and village road maintenance as part of village revival efforts. As they were just breaking ground on constructing the resettlement in Pusuca, Fundación Esquel facilitated the creation of a new village council. After construction was completed and

residents began occupying their new homes in early 2009, the council continued organizing weekly mingas for irrigation, potable water, and other public works.

There were two kinds of mingas organized in Manzano and Pusuca—irrigation mingas and what were referred to as community mingas—and both had certain distinct features in each community. Both communities maintained a system of *rayas* ("check marks" for attendance credit) to keep track of participation for both community and irrigation mingas, although raya accounting was decidedly stricter in irrigation mingas in both communities and in Pusuca overall. In both sites, community mingas were organized by the village councils. In Manzano, irrigation mingas were organized by the Irrigation Committee for Puela Parish, which organized all six parish villages by notifying each village council of minga days and times. Irrigation mingas in Pusuca were organized by Esquel project engineers through the village council and an irrigation sub-committee.

When minga practice is organized by the state and NGOs, who operate according to the clock and for whom time management is as much a factor of synchronization as it is productivity, tensions between the temporal schemata of wage labor and subsistence agriculture can be exacerbated; expert practices and policies can rigidify contending domains of practice and constrain local capacities for coping and adaptation. Furthermore, in addition to facilitating task coordination, the temporal regimes can serve as a form of discipline. Colonial administration of the Andean region entailed the imposition of systematic work habits (Salz 1984) and factory owners in Nash's (1967) Guatemalan factory forced Mayan laborers to learn punctuality by locking doors following a morning whistle. So too can we envision time management as a means of regulating bodies and populations, a disciplinary technique for enforcing compliance and distinguishing the deserving from the undeserving.

In Pusuca, failure to participate in mingas was sanctioned by levying $10-$20 fines on a household and, in the case of the irrigation canal being constructed at the time, those who failed to participate or pay the fines were told they would be excluded from irrigation rights. The Pusuca village council was in many ways similar to other village councils in structure and mandate,[5] but a representative from Esquel, Martha, served as an advisor to the council and other sub-committees. She attended all meetings and mingas and guided leaders through decision-making processes, which in 2011 primarily entailed the organization of mingas and village meetings, and the near constant arbitration of conflicts over minga practice and sanctions for non-participation.

In Manzano, mingas were organized once or twice per month, and rayas were granted based on attendance for a defined period of time (usually 8 A.M. to 2 P.M.). Common tasks included clearing ash, soil, overgrowth, and other debris from irrigation canals, potable water systems, and roads, with mixed-gender groups leapfrogging one another as they cleared each section. Mingas in Pusuca were considerably more regimented and regulated; to earn a raya, households

had to complete an assigned task (*tarea*) determined by engineers hired by the irrigation project funders—the Provincial Council of Chimborazo (with support from The World Bank) and Fundación Esquel. Though working an equal amount of time was the common standard in the region, they came to adopt the task system, the same rubric employed in hacienda era minga administration (Lyons 2006). One task I participated in involved each household digging a length of trench, ten meters in length, one meter deep, and a half meter wide. Some younger men were able to complete this task in half a day, while it took others several days. Another task was for each of us to carry fifty shovelfuls of sand and fifty shovelfuls of rock in grain sacks from roadside deposits to work sites 100-200 meters away. Men generally carried ten to twelve shovelfuls per sack, while women and older men carried three to six shovelfuls per sack and therefore made two or three times as many trips as the men. Though minga rules mandated the participation of just one household member, in some cases, multiple members of the same household worked just to complete one task. In both sites, households could send peons as substitute or additional laborers. As in Manzano, the fine for non-participation in irrigation mingas was $20, but households behind in rayas were frequently given opportunities to make up missed work by working extra days or sending multiple household members or peons to complete multiple tasks.

In contrast to irrigation mingas, community mingas were generally more informal in both sites; ad hoc in Manzano (approximately every six to eight weeks) and weekly in Pusuca. For community mingas in both villages, rayas were assigned for working until the entire work party completed a task, not for individual tasks assigned to each household. Though in 2011, community mingas in Pusuca worked exclusively on the irrigation canal, they were generally all-purpose—in 2009, I observed community mingas building a community park and rain catchment systems. A community minga working on the irrigation canal in Pusuca would usually run from 8 A.M. to 4 P.M. and typically worked to clear debris from newly dug trenches along the canal or carry PVC pipes from roadside deposits to work sites deeper in the hills. In Manzano, the work day for community mingas was generally shorter than in Pusuca, usually beginning around 8 A.M. and running until 1 or 2 P.M.

Much of the decision making and organizing of Pusuca mingas took place outside the community. In 2011, all mingas took place on the irrigation canal, with engineers employed to manage work and design. Esquel's community coordinator, Martha, and the irrigation engineers set work schedules and locations on the canal based on the iterative delivery of materials and the progress of construction. Martha and the engineers attended village meetings to enumerate schedules and work deadlines to the community directly, or else convey these messages through village council or irrigation sub-committee leadership. In many ways, Esquel was myopically focused on agricultural development and largely intolerant of non-agricultural economic strategies.

This was a consequential irony—marginalizing wage laborers in the spatio-temporal management of minga practice created practically insurmountable barriers to returning to agricultural production. What is more, the external locus of decision-making power fostered a projection of this bias in village politics in favor of households engaged in primarily agricultural economic activities over those who were not. The agro-centric politics of Esquel and Pusuca meant that households who did not meet their minga obligations would be excluded from commons resources, chief among them being the irrigation canal, a critical resource necessary for returning to agricultural production.

The temporal regime of minga practice in Pusuca underwent a significant change in 2011. In 2009, when I initially conducted fieldwork in the area, mingas were primarily held on weekends in Pusuca. At this time, all minga practice accorded rayas based on working for a defined time period, and minga attendance was established as a prerequisite for inclusion in any development project, per the Fundación Esquel-brokered community charter. Mingas were challenging to attend for those who were working outside of Pusuca, but not impossible. Many were able to return for a day or an entire weekend to participate. However, I returned in 2011 when the long-awaited irrigation project began and found things had changed. It was then that the engineers had been brought in to design and manage work, and the village council adopted the *tarea* system of mandated workloads. Notably, they shifted mingas to weekdays, as the engineers could not be expected to work weekends. This made it even more challenging for wage laborers to fulfill their minga duties, as weekday mingas were virtually impossible for almost all of them. Some still sent family members but were unable to afford to pay peons or the fines for missed mingas with their paltry earnings. The result was that many fell increasingly behind in their obligations and were facing sanctions. Some returned periodically for a week or two and attempted to catch up by working almost daily on minga responsibilities, but this rarely resulted in catching up on all tareas in arrears.

Judith Guamushi was in her mid-thirties and a mother of two young girls. She served as secretary of the Irrigation Committee and, though she came from one of the poorest families in her home village and the resettlement, in her capacity as secretary she served as monitor of work, recording rayas for those who completed their tareas. Though small of stature (about five feet), her stout frame matched her bold and unflagging personality—she was vocally adamant that people complete their responsibilities and strict in assigning or withholding rayas. She was, however, not alone in monitoring her neighbors, as virtually all residents engaged in relentless gossip about their neighbors' participation and completion of community responsibilities. Almost without fail, monthly village council meetings devolved into multiple heated quarrels about who was behind or up-to-date in their rayas and who therefore merited inclusion or exclusion from irrigation, potable water, or any of the several ongoing micro-development projects in the resettlement. While designated villagers like Judith kept meticulous accounts of rayas and tareas, gossip and denunciation in public meetings proved to be a critical technique for enforcing conformity, though, it must be noted, Esquel retained the ultimate authority over formal sanctions, and Martha frequently intervened to resolve conflicts (see Faas n.d.).

Metafunctions of Minga: Domination, Solidarity, and Agency

> A minga is community work; that is, work by all of us for the good of the community. It's an effort on behalf of the community, for society, the common good of all.

In the above quote, Mariana, an elderly resettler in Pusuca, proudly described the minga tradition to me in ways similar to many others, echoing the popular regard for mingas as voluntary solidarity practices. There is, in fact, little reason to doubt that, in a region historically lacking draft animals and where people have historically practiced intensive agriculture, labor sharing in one form or another has been a key feature of Andean culture since before the Incan conquest of the region. Throughout the twentieth century, minga practice was creatively adapted by indigenous peoples and rural campesinos, becoming a key feature of rural Andean civil society and, in the late 20th and early 21st centuries, mingas emerged as important vehicles for campesino and indigenous social movements in Ecuador (see Colloredo-Mansfeld 2009). However, minga practice also has a long history as a vehicle for domination, and these dueling historical currents were salient features of the way the practice developed in the shadow of Mt. Tungurahua in the wake of the eruptions.

Rather than exacting taxes in the form of currency or agricultural products, Incan rulers imposed labor taxes on their subjects by coopting pre-Incan cooperative labor parties in a practice known as *mit'a* (Quechua "turn") to press subjects into service in agricultural and textile production as well as warfare and the construction of state infrastructure (McEwan 2006). The practice was underwritten by a discourse of reciprocity with Inca rulers who "reciprocated" with tools and materials for state projects, and the practice facilitated some social mobility for mit'a workers, who could be rewarded for outstanding deeds. Spanish colonial administrators adopted this practice in the administration of mining, textile production, public works, and agriculture and herding operations in Ecuador and throughout the Andes with corvée *mita* labor distinguished from *minga* volunteer labor (often the same laborers), the latter of which was compensated (Lyons 2006; Stern 1988). Importantly, laborers worked to increasingly improve labor conditions, abandon the mita system in favor of the minga system, and convert minga practice into a type of wage relation (Stern 1988). In the hacienda era, in addition to organizing minga work parties (Salz 1984), hacienda bosses assigned labor quotas (*tareas*, or "tasks") to hacienda laborers, the completion of which was recorded as a *raya* (checkmark, or credit for task completion) (Lyons 2006).

Alongside the slow demise of the hacienda system in the middle of the 20th century, minga became an abiding feature of local governance. Though popularly elected, leaders in villages like Manzano derived much of their power from the reproduction of relations of local minga practice, enabling the brokerage of outside resources and relationships, and the reproduction of relations with outside organizations, which underwrote their capacity to organize mingas (Faas 2015, n.d.). In the first decades of the 21st century, minga practice in Penipe—still buttressed by discourses of reciprocal obligation and solidarity—frequently entails mandatory household contributions to state and NGO projects as a condition of inclusion and good standing. Yet, while there were periodic tensions around minga practice and the resources maintained, within each village, mingas remained a source of pride invoked as examples of local values and solidarity.

That minga became part of a suite of practices of both domination and liberation for Andean peoples at various stages in history bears some similarity with the agency exercised by people in the post-disaster contexts around Mt. Tungurahua. First, locals organized mingas in the immediate aftermath of the eruptions, clearing ash and debris from crops, trees, and homes and organizing the distribution of aid and minor reconstruction projects, largely independent of state and humanitarian organizations. Second, local leaders organized community mingas as displays of solidarity and community organization to attract the attention of NGOs. Third, when opportunities arose, it was common for villagers and displaced people to enthusiastically volunteer their labor as an in-kind contribution in exchange for resources ranging from rations to reconstruction aid to infrastructure and resettlement. And finally, as the case of Judith illustrates, in Pusuca, some found new opportunities for minga leaderships to be a vehicle for social mobility. Likewise, in Pusuca, a diversity of villagers with no formal leadership roles participated in enforcing conformity with minga rules and community standards through unremitting gossip and, at times, public accusations and denunciations of other villagers and those in leadership positions.

In the recovery and resettlement processes in Pusuca, minga practice was coopted by NGOs led by well-intentioned experts who—however inadvertently—usurped local control over minga practice and amplified and rigidified the formalization of minga rules by reinstating the moribund tarea system of the hacienda era (perhaps unwittingly) while simultaneously imposing the temporal regime of the nine-to-five work schedule. These imposed techniques of minga administration marginalized those engaged in wage labor as a temporary means for coping with the scarcity of disaster and displacement. Significantly, the temporal regime was not questioned, though people were often vocal about enduring the hardships associated with the new schedules. This meant that the agency exercised by those like Judith in leadership roles and the others who enforced conformity via gossip and denunciation, was riddled with contradictions and tensions, as these acts revealed an internalization of rules established by Fundación Esquel and the engineers as part of the ethics

and obligations of minga practice that people identified with as a significant part of their cultural heritage.

Conclusions

This study began with a concern for the fate of the practice of minga collective work parties in the aftermath of disastrous eruptions of Mt. Tungurahua. This concern was rooted in the fact that, despite a complex legacy of domination and entrenched power relations, mingas were important practices of adaptive management of the commons, mutual aid, civil society, and cultural identity for the smallholding mestizo campesinos in the villages around Mt. Tungurahua. It was also born of a wealth of evidence that the loss of subsistence resources, transitions to wage labor, and intrusions of the state and NGOs in disaster recovery and resettlement could each individually or collectively threaten the continuity of minga practice. What I found was a complex interplay of these factors, as local power relations shaped the dynamics of post-disaster minga practice and marginalized villagers who struggled to meet a variety of social, economic, and political challenges of post-disaster life in Manzano and Pusuca.

Absent agricultural and common resources, minga practice did not continue in the landless Penipe Nuevo resettlement. However, the practice did continue in Pusuca, a resettlement where land was allocated to resettler households and for common use, and it did endure in villages like Manzano, where Penipe Nuevo resettlers returned to cultivate their lands and reactivate their communities. In the Pusuca resettlement, wage employment was negatively associated with minga practice and, while this was certainly a concern in Manzano, it was not a significant factor in the continuity of the practice. Manzano villagers were able to schedule minga work parties to accommodate a variety of work schedules. Yet, some households were excluded from minga practice and community affairs as a result of social and political conflicts.

In Pusuca, where wage employment appeared to be a salient issue affecting the continuity of minga practice, further investigation revealed that minga management had in many respects been coopted and formalized by program managers and engineers working for NGOs. They imposed measured work outputs reminiscent of hacienda labor rules and the temporal regime of the nine-to-five clock, thereby excluding those resettlers who themselves were tied to this schedule in their employment. Moreover, the external regulation of time, labor, and bodies served as a form of discipline—imposing standards of practice and exclusion derived from the priorities of a NGO.

When agricultural development is managed by agencies operating according to the temporal regime of wage labor, the tension between these regimes is more pronounced and difficult to reconcile. The pliant time management of subsistence agriculturalists in Pusuca was at one time able to accommodate the community's wage laborers (as in Manzano) by organizing mingas on weekends. So long as the locus of

power to manage time was situated within the community, both communities proved capable of adapting to the diverse time constraints of their members. However, once that power was appropriated by the state and NGOs that funded the irrigation program and imposed their own temporal regime, tension increased for employed resettlers to the point of becoming unmanageable. Thus, though there was certainly a tension prior to these interventions, it was not absolute, and resettlers were able to manage it. In this context, village politics were canalized by institutional imperative, and new divisions produced and reified.

There emerged a metafunction of minga practice in Pusuca, whereby tensions of domination, solidarity, and agency were further entangled by increasingly internalized logics of outside experts. Though their use of time was oppressive, experts working for NGOs did not willfully impose the nine-to-five regime with oppressive intent. It was merely business as usual for them; it did not appear to have ideological content or value, and it was not questioned or contested. Instead, it was taken as fact, not a matter of contention. Within the village, for all the haggling over each individual minga, missed rayas, and incomplete tareas, no one ever called out the troubling pattern of shifting to schedules that worked best for engineers but caused continual difficulty for employed resettlers. It was just taken for granted.

While people struggled with and complained about individual tareas, attitudes toward the tarea system ranged from passive acceptance to enthusiasm, though the more enthusiastic tended to be able-bodied males concerned that everyone should provide equal labor. The roots of the tarea system in hacienda labor were never mentioned, and no one could recall even who first proposed the rule. We can therefore consider the transformation of time and minga practice as internalized by resettlers and NGO experts alike. Thus, even the agency exercised by those whose minga leadership was a form of social mobility served the interests of dominant power by enforcing rules derived from dominant time and the regulation of labor and bodies.

Resettlement and recovery came wrapped in the operational logic of capitalism. This was not a clash of discrete systems but the outcome of very specific power relations at succeeding levels of scale; not a linear transition from antecedent cultural practices and livelihoods to a new normal, but an enduring tension that is part of new institutional relations born in the post-disaster context. Minga practice has a long history of cooperation and domination that remain features of the practice both when guided by local leaders and by outside organizations. In Manzano, this was a key element of local governance and the reproduction of local power relations. In Pusuca, minga practice was formalized according to rules imposed by outside organizations and experts and which shared much in common with colonial and hacienda era practices of extracting labor taxes. The rigidity of the time imposed not only undermined the continuity of minga practice but also stood squarely in the way of household capacities to recover their livelihoods in the wake of the disaster and adapt to re-

settlement. In these contexts, minga practice endured while becoming itself a trial of endurance for resettlers.

Notes

[1]This term is not used by locals, but for descriptive purposes, I distinguish the "Penipe Nuevo" resettlement community from the pre-existing Penipe Township, of which it was an extension.

[2]Though campesino is typically translated as "peasant," this term may not be appropriate for describing *contemporary* peoples, so I use the term campesino, as this is how my informants self-identified.

[3]All names are pseudonyms.

[4]Mean adult age in Manzano (45) was six years older than in Pusuca (39). Although the number of wage laborers in both sites was roughly equal (Manzano = 25; Pusuca = 23), there was a greater percentage of wage laborers in Pusuca (32%) than in Manzano (18%). However, there was no correlation between mean adult age by household and minga participation and, because I examine inter-household variation in participation, rather than inter-village variation, the proportion of wage laborers does not bear directly upon analysis.

[5]The Directiva was not referred to using the official term for village council (*cabildo*) because Pusuca was not legally incorporated as a village (*comuna*).

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