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Living on the Slopes: Entrepreneurial Preparedness in a Context under Continuous Threat

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Living on the Slopes: Entrepreneurial Preparedness in a Context under Continuous Threat

Abstract. In this paper, we examine how entrepreneurs living in communities under continuous threat prepare themselves to continue with their enterprising activities or engage in new ones after the expected crisis occurs. Most of the crisis literature on disasters and entrepreneurship focuses on aftermath responses, but the antecedents of such entrepreneurial behavior and its connection to past and future crises remains largely unexplored. Based on a two-stage exploratory study pre and post the Calbuco Volcano eruptions in 2015 and 2016 in Chile, we introduce the notion of entrepreneurial preparedness in a context of continuous threat and elaborate on its four central attributes: anchored reflectiveness, situated experience, breaking through, and reaching out. Subsequently, our work develops a refined understanding of pre and post-disaster entrepreneurship and offers a novel base for theorizing on the relationship between entrepreneurial preparedness in contexts of continuous threat.

Keywords: entrepreneurship; post-disaster; entrepreneurial preparedness; resilience, Chile; volcano; crisis

Geolocation information Calbuco Volcano: 41.3328° S, 72.6111° W

Introduction

In April 2015, the Calbuco Volcano caused a major crisis for several communities in the South of Chile. The eruption caused the evacuation of nearly 9,000 people. The ashes covered nearby towns completely, destroying infrastructure, houses and more than 200 small businesses. After three eruptions, the volcanic activity declined until June 2016, when the state of alert was raised again. Affected communities were back on hold until August, when the risk of another volcano eruption that would expand the crisis finally declined. Although central and local authorities implemented emergency actions, individuals and local groups handled most of the disaster-induced crisis, over the course of 18 months. Many of the 9,000 affected inhabitants stayed, rebuilt, continuing to live and operate in the area. While disastrous, new opportunities for restarting and expanding business activities were recognized and acted upon, as a response to the crisis.

The crisis literature on natural disasters and entrepreneurship is still scarce. Most of it focuses on the aftermath of the disaster, either on natural conditions or prevailing social and institutional factors shaping subsequent entrepreneurial behavior (Dinger et al. 2012). Others note how and why entrepreneurial behavior can reduce immediate suffering (Shepherd and Williams 2014), recover the area affected by the disaster (Chamlee-Wright and Storr 2009), create value for others through new ventures (Williams and Shepherd 2016b), reconstruct social capital (Johannisson and Olaison 2007), and build resilience (Linnenluecke and McKnight 2017; McKnight and Linnenluecke 2016; Williams and Shepherd 2016a). Predominantly, this work has been derived from one-off events, normally by capturing late reactions e.g. two years after an earthquake (Williams and Shepherd 2016a), one year after a tornado (Dinger et al. 2012) or through secondary accounts such as standardized victims' statements within ill-prepared communities (Williams and Shepherd 2016b). Similarly, recent entrepreneurship research on other types of crises (e.g. riots, recessions) tends to deal with

the effects and responses of one-off (Doern 2016) or unanticipated infrequent events (Lai et al. 2016). Despite their importance and timeliness, little can be confidently said about compassion, emotions, attachment, belonging, readiness, and alike given the cognitive distance between researchers and victims. In addition, the effect of retrospective biases in recollecting victims' experiences before and after crisis events is problematic.

In this study, we argue that mitigating this methodological limitation is of particular importance for developing an understanding of entrepreneurs' responses to crisis events under continuous threat, namely when entrepreneurs are constantly threatened with, or even experience, the loss of resources after the crisis event (Hobfoll 2001). We know that entrepreneurs naturally prepare themselves for what is likely to occur and react using a portfolio of resources, acquired through learning from prior experiences and stories passed over generations and articulated through neighboring practices (Cheshire 2015; Johannisson and Olaison 2007). However, how entrepreneurial responses unfold before and during crises in contexts under continuous threat, as in the case of volcanos, remains largely uncovered in the entrepreneurship literature. This leads us to question how do entrepreneurs living under continuous threat prepare themselves to continue with their business activities (or engage in new ones) after the expected event occurs?

In tackling this question, we conducted a novel two-stage exploratory study pre and post the Calbuco Volcano eruptions in 2015 and 2016 in Chile. We interviewed a total of 62 people, 57 right after the volcano eruptions in 2015 and 15 before and during the 2016 Yellow Alerts (i.e. prepare for evacuation)[1]. Going back and forth between our field work and academic literature, we discovered that entrepreneurial preparedness, defined as "a concept that encapsulates the immense complexity of accumulated learning that individuals bring to the new venture creation process"(Cope 2005, 378), has so-far been neglected in the crisis literature on entrepreneurship but that it offers a fruitful base to deductively theorize on

our findings. In our context, we find that entrepreneurial preparedness is not about preparing oneself to become an entrepreneur facing perceived opportunities. Rather, it is about preparing oneself for an entrepreneurial response facing continuous threats. In this vein, entrepreneurial preparedness turns entrepreneurship into an antecedent of an effective response to continuous threats; our analyses reveal the four distinct building blocks of this. We derived these elements by looking at past experiences, introspection, learning, interaction with the wider environment and recognition of possible ways forward. These are: *anchored reflectiveness, situated experience, breaking through and reaching out.*

Our work makes three conceptual contributions at the intersection of entrepreneurship and crisis literature. First, we contribute to crisis literature on post-disaster entrepreneurship (Williams and Shepherd 2016a; Shepherd and Williams 2014) by introducing and elaborating on the concept of entrepreneurial preparedness under continuous threat of natural disasters. In doing so, we expand the current focus in crisis research on entrepreneurship from one-off and unanticipated crisis events (Doern 2016) by enabling a deeper understanding of how entrepreneurs constantly threatened with the loss of resources prepare themselves to react and overcome the actual crisis event. Second, we add to the crisis management literature at the intersection of entrepreneurship and resilience (McKnight and Linnenluecke 2016; Williams and Vorley 2017; Williams et al. 2017) by explaining how entrepreneurial preparedness in contexts under continuous threat can strengthen the resilience of entrepreneurs and their local communities to 'bounce back' but also to 'bounce forward' following a crisis event. Concomitantly, the entrepreneurial preparedness concept invites a reconsideration of how 'ordinary organizations' can contribute to the development of resilient infrastructures in a community (Van Der Vegt et al. 2015) and how they help compensate for the failure of (inter-)national and regional institutional support (Cheshire 2015; Paton 2006) *before* and *after* a crisis event.

Theoretical Background

Natural disaster and crisis management

The number of crisis events caused by natural disasters (e.g. hurricanes, floods, earthquakes, volcano outbreaks) has dramatically increased over the past decades (ISCRAM 2017). To distinguish a disaster from a routine emergency that specialized agencies such as firefighters respond to on a daily basis, a disaster is usually understood as a critical, widely shared, devastating event following unusual procedures (Perry 2009). Besides its unexpected occurrence, disasters draw in external emergency actors that are not normally part of the organizing practices in affected communities (Quarantelli 1988). This makes the planning process for communities under continuous threat particularly challenging. As one response, scholars from various disciplines have increasingly called for developing our understanding of more dynamic, perhaps entrepreneurial, locally adaptive responses to recover from natural disasters and prepare themselves for new ones (Drabek and McEntire 2003; Quarantelli 1988).

Focusing on local adaptation, a large body of the existing disaster management research has highlighted the role of institutional preparedness (Quarantelli 1988; Tierney 2012) and external support for affected areas before, during and after a natural disaster (McEntire and Myers 2004; Paton 2006). Following the standard disaster cycle of emergency agencies that distinguish pre-disaster preparation and mitigation from post-disaster response and recovery (Tierney 2012), the emphasis is placed on management problems regarding the communication process, the exercise of authority, and the development of co-ordination (Quarantelli 1988). However, more recently, scholars have highlighted contradictions inherent in the (inter-)national institutional support during the disaster response and recovery phases, as such support tends to be locally inefficient and non-adaptable (Perry 2009). The main critique is that when a community is significantly disrupted, institutionalized support

for local agents is often absent, or incapable to react quickly to address immediate needs. This lack of direct institutional support for regional institutions often further entrenches a cycle of aid dependency in disaster-affected communities (Lizarralde, Johnson, and Davidson 2010).

The fact that these contradictions of post-disaster institutional support evolve over time and further compound institutional unresponsiveness means that external disruptions require the emergence of bottom-up processes. In this respect, flaws in post-disaster support are compensated or even replaced by local practices emerging in an affected community (McEntire and Myers 2004; Perry 2009). However, the dominant theme in the extant research on emergent local practices is the focus on how they respond to, and help recover from, unexpected and one off disaster events (Cheshire 2015). Hence, despite an agreement among disaster experts on the need for self-organized responses (Majchrzak, Jarvenpaa, and Hollingshead 2007; Paton 2006), we have little evidence how community members prepare themselves to face, go through and recover from anticipated-yet-abrupt natural shocks (Cheshire 2015; Drabek and McEntire 2003; Fearnley 2013).

In this study, we argue that the dominant focus on post-disaster community responses represents an important gap in the knowledge on disaster management because the presence of a continuous threat of a disaster is likely to yield different responses from community members as they prepare for something they may view as inevitable at some point. Whilst one can never fully prepare and mitigate the effects of such a catastrophic event, it has implications for developing an understanding of the antecedents of community members' response to a natural disaster. One route to address this gap is to look at the community group of local entrepreneurs, and how entrepreneurs living in communities under continuous threat prepare themselves to continue with their business activities (or engage in new ones) after the disaster occurs.

Entrepreneurship, Resilience and Disaster Preparedness

To date, the crisis literature on entrepreneurship and natural disasters is still scarce. Nevertheless, a number of important contributions have emerged in recent years that have developed our understanding of entrepreneurs in the context of natural disasters. For instance, Runyan (2006) and Asgary et al. (2012) have highlighted the challenges for small businesses to react to and overcome natural disasters, and, more generally, how disaster events impact on their subsequent business performance. More recently, Shepherd and Williams' (2014) study has introduced the important role of new ventures' compassion organizing as a disaster response, whereby entrepreneurs emerge quickly to customize resources to alleviate the instant suffering of victims. The same authors have expanded the knowledge further by demonstrating how new venture creation not only ameliorates immediate suffering but also acts as an important facilitator of *resilience* among wider affected social groups and communities (Williams and Shepherd 2016a); a concept which van der Vegt et al. (2015) identify as being critical to understanding business activity after such events. The broader entrepreneurship literature on crisis has increasingly discussed the relevance of resilience as a concept that helps understand actors' (individuals, businesses or communities) responses to crisis events (Williams and Vorley 2017; Williams et al. 2017).

Herbane (2010) suggests that entrepreneurs demonstrate their resilience by preparing for crises rather than trying to prevent them. Hobfoll's (2001) perspective indicates resilience from a resource perspective whereby individuals must identify methods of accumulating resources in the immediate aftermath of a stressful event or crisis, which can manifest in personal, social or economic recovery strategies (Doern 2017). Indeed, resourcefulness has been viewed as a critical ingredient in the relationship between resilience and entrepreneurial success (Ayala and Manzano 2014) and resilience prospers when resources are locally owned and equally distributed across a community (Matarrita-Cascante and Trejos 2013).

Williams et al. (2017) identify resilience as requiring some preparation activities, which can involve being pro-active towards prevention and mitigation of the effects of such a stressful event (van der Vegt et al. 2015). Weick and Sutcliffe (2001) also emphasize preparedness and resilience from an organizational point of view, in terms of the actions of managers to reduce vulnerability. In a context of conflict, Bullough et al. (2014) demonstrate how more resilient individuals retain higher entrepreneurial intentions, suggesting that the development of this resilience and preparation for crises may emerge from various entrepreneurial actions such as business training, networking, mentoring and reflective practice. However, as Doern (2016) highlights in the London riots, an experience leading many to re-consider their priorities and business location, businesses do not always anticipate the real threat that a potential crisis event entails. This suggests exploring preparedness as a particularly relevant concept for understanding entrepreneurs' responses to such threats.

In the entrepreneurship literature, preparedness has been discussed in the context of entrepreneurial learning (Cope 2005; Dimov 2007; Harvey and Evans 1995) and viewed as having four distinct components – with the backwards, inwards and outwards, forwards flow representing the central features of the construct (Pittaway and Thorpe 2012). It involves entrepreneurs looking *backwards,* reflecting on experiences whilst looking *inwards* at how prepared they are for the entrepreneurial task. Entrepreneurs must also look *outwards* to interact and engage with the wider environment whilst looking *forwards* to visualize how their venture may succeed or fulfil its goals.

To our knowledge, in the context of crises, scholars have discussed entrepreneurial preparedness solely as an implicit building block for explaining resilience, for example, compassion organizing after wildfires or earthquakes as forward and outward looking responses (Williams and Shepherd 2016a; Williams and Shepherd 2016b). However, as an important antecedent to resilience, entrepreneurial preparedness in a context of continuous

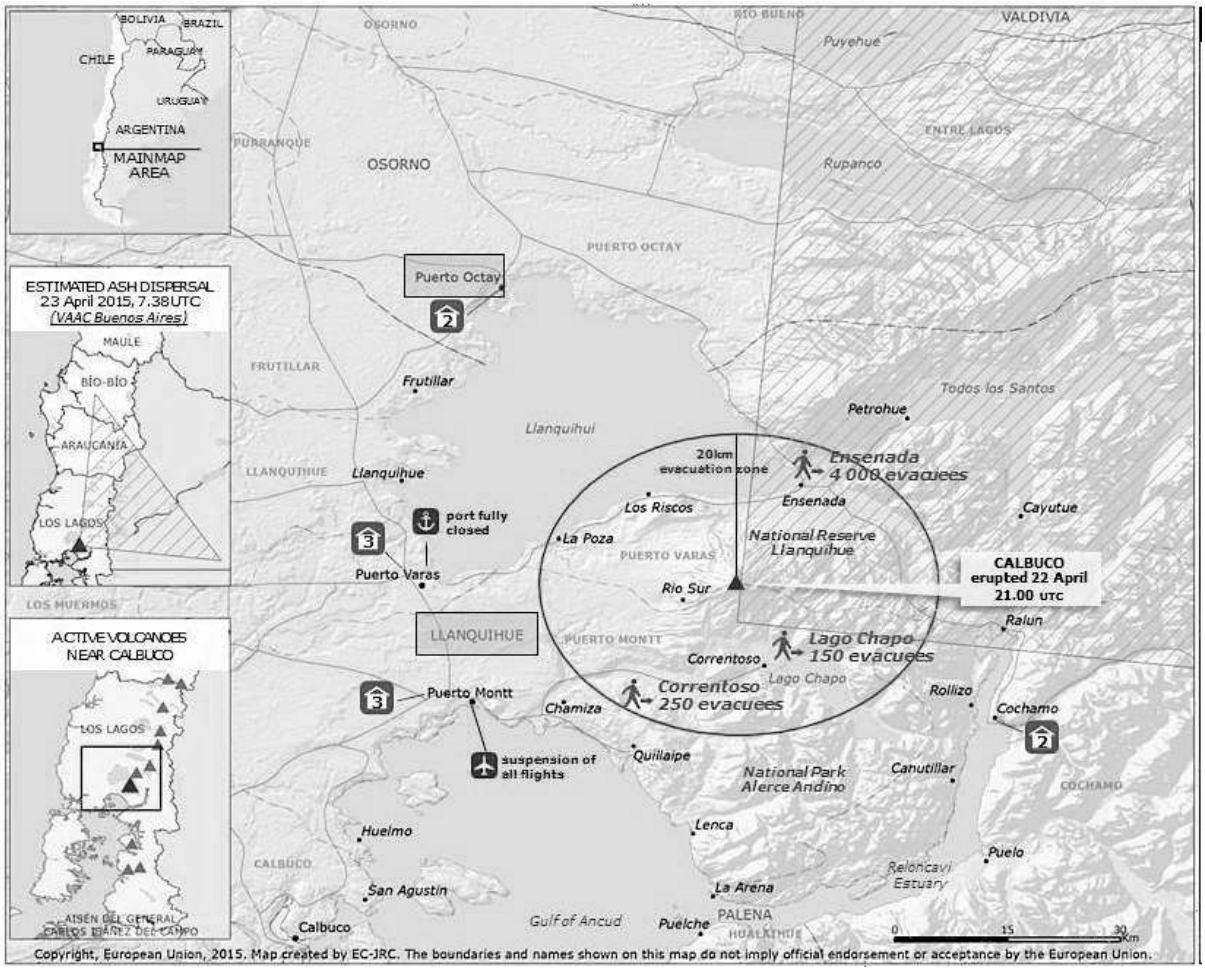
threat has received little attention. Drawing on our extensive data, in the remainder of this paper we examine the role of entrepreneurial preparedness in a context of continuous threat as a so far underexplored mechanism in explaining how community members organize support before and after a disaster, and so help develop a community's post-disaster resilience.

Research context

Location, eruption and evacuation

According to the Chile's National Geology and Mining agency, Calbuco is considered the third most dangerous volcano, and due to its 13 eruptions in the last 50 years one of the most active ones, of the southern Chilean Andes (Bio Bio Chile 2015). It is located 11km south of Llanquihue Lake and 30km northeast of the city of Puerto Montt in the Los Lagos Region's Lake District, approximately 1,000 km south of Santiago. On 22nd April 2015, the Calbuco volcano erupted at around 18:00 local time, for the first time since 1972. Seismic activity started increasing significantly an hour before the explosion, which warned people living adjacent to the volcano that they should leave the place. Volcanic ash reached a height greater than 15 km with pyroclastic dispersal moving east-northeast of the volcano. This first eruption lasted 90 minutes. Authorities issued a Red Alert, evacuating 1,500 people in the nearby area and called for the evacuation of all other people within a 20 km radius evacuation zone[2]. As of 24th April 2015, 4,500 people were evacuated, mostly from Ensenada, via eight evacuation routes towards shelters in Puerto Montt, Puerto Varas, Puerto Octay and Cochamo (Figure 1). Central government declared a state of constitutional exception and catastrophe area for the affected provinces[3].

Figure 1. Calbuco Volcanic Eruption



Emergency Response Coordination Centre (ERCC) Echo Daily Map 23/04/2015. Source: ONEMI, SERNAGEOMIN[4].

Aftermath

In just ten days, 210 million cubic meters of ashes covered soils and aquatic systems, reaching 60 cm in height in some adjacent areas. 655 houses were severely damaged and 51 totally destroyed due to the weight of the pyroclastic rocks, lahar and mudslides. A total of 970 families were direct victims of the eruption. Despite the catastrophic nature of the eruptions and extensive damage, there were no reports of deaths, missing persons or serious injuries. According to the Service for Technical Cooperation (Sercotec), over 100 tourism-related and over 100 other small businesses were destroyed or affected in a variety of ways[5].

One year on

A year after the first series of eruptions, in June 2016, Chile's early warning system detected new plumes, movements in the surface of the volcano, changes in the internal structure, and tremors caused by rock-fracturing. On 23rd June, the level of alert was raised to Yellow[6] [7], as the risks facing the communities had increased significantly. Between 15th and 31st July, five volcanic-tectonic tremors were detected and authorities declared once again a high-risk zone within 2 km of the crater and a 10 km exclusion zone. The nearby communities were put on standby (i.e. be ready if necessary) for nearly two months, as it was in 2015. By mid-August 2016, seismicity at Calbuco began to oscillate at low levels and finally declined. The alert level was lowered to Green, yet the Yellow Alert was maintained for the Llanquihue and Puerto Octay provinces. On 21st August 2016, the 10 km exclusion was lifted, but a new 1.5 km exclusion zone around the craters remained in effect and the communities were asked to continue to stay away from drainages[8].

Methods

This study draws on a single empirical setting and uses abductive research (Timmermans and Tavory 2012), comprising qualitative inductive techniques and deductive reasoning. We followed the approach laid out by Gioia et al. (2013) to collect and analyze our data, focusing on experiences, introspection, learning, interaction with the wider environment and the recognition of possible ways forward. The first and most extensive part of our research is inductive. The subsequent deductive analysis is guided by key concepts across preparedness, entrepreneurship and crisis literature to draw analytical inferences from the interviews and observation data. The established procedure for inductive research by Gioia and colleagues aims to increase rigor throughout the inductive reasoning process, and is also consistent with abductive research where "data and existing theory are now considered in tandem" (Gioia et

al. 2013: 21). This approach enabled us to conduct a detailed exploration of how actors behave before, during and in the aftermath of a disaster, particularly it helped capture the historical events and the social, human, and situational dimensions of the phenomenon. At the same time, it increases confidence in the results and emergent theoretical categories, as we explore the situational fit between our observations and similar phenomena explained in the literature.

Research site and rationale

In our quest to explore the role of entrepreneurial preparedness before, during and after the disaster, we happened to be in the right place at the right time, to capture the phenomenon of interest.[9] This started in April, 2015, in the communities' right next to the Calbuco volcano outbreak. While fortuitous for us as researchers, this volcano eruption represented a serious and distressing event in the life of nearly 5,000 people. We respectfully recognize the bravery and efforts of those affected, who despite facing continuous threat stayed, reorganized and continued with their lives.

Despite that, conducting research in a disaster-affected context (e.g. Ensenada, Puerto Varas, and Chapo) allowed us to be aligned with three contextual boundary conditions of theoretical relevance. First, it enabled us to capture preparation, as the observed communities reflect an area under continuous threat of loss of resources (Hobfoll 2001), where repetitive events from an identifiable source are likely to occur yet the specific timing is not easily predictable. Second, we were able to capture action during the event, as this particular type of disaster has a timeframe of occurrence long enough to observe reactions, yet safe enough to gain in-depth knowledge of the area and of those affected by the disaster. Finally, our study captures responses and learning over time (Williams et al. 2017) and how this is integrated back into the community's resource base, since the Volcano outbreak reflects a type of disaster with a long-term impact and multiple stages of recovery.

Data collection

Data were collected in two rounds, using open interviews and observation techniques. The first round of data collection was conducted over the course of two weeks in June 2015, starting 48 days after the eruption. We interviewed 57 people; including entrepreneurs, business owners, and experts from the local government, rescue teams and support organizations. To enrich the conversation and collective descriptions, when possible we gathered two participants from the same organization, for example Irina and her husband Jim, both owners of a hostel in Ensenada. The second round of data collection was conducted in July 2016 over the course of 10 days. We interviewed 15 people operating within the exclusion zone under Yellow Alert, a selection of 11 entrepreneurs and four experts from the first round.

In more detail, our first data collection round (2015) was of an exploratory nature, asking about the impact of and plans to respond to the disaster. Here, we focused on achieving greater variance among the informants—approximately 1/3 pertaining to different governmental bodies, and 2/3 being entrepreneurs and civic society organizations affected by the eruption. We captured four main government agencies forming the institutionalized response to natural disasters in Chile. Our second round of data collection (2016) focused on identifying patterns in entrepreneurial preparedness and thus emphasized our data collection almost entirely on entrepreneurs. However, interviewing both the entrepreneurs and a variety of other informants was important to develop an understanding of the overall disaster response system, the broader social and natural context within which the entrepreneurs were operating, as well as to triangulate information from the various sources.

Given our particular emphasis on entrepreneurial behaviors pre and post disaster, we focused our analysis on 38 entrepreneurs and complement these insights gained from support

organizations directly connected to business recovery and entrepreneurial activities, as detailed in Table 1. The observed entrepreneurs in our study mostly run micro-enterprises in the tourism and agriculture industry. Hence, following Lepoutre and Valente (2012), entrepreneurs and their ventures do in fact reflect different levels (individual versus organization) but offer sufficient homogeneity within a venture necessary to relate preparedness as an individual-level construct to preparedness as a venture-level construct. Doing so allowed us to explore further how entrepreneurial preparedness can inform our understanding of the resilience of community organizations and their broader social context following a crisis event.

Table 1. Key informants

Informants	Organization	Location	Round
Adolfo	Corfo	Puerto Montt	1
Carmen Gloria	Minister of Finance Regional office	Puerto Montt	1 - 2
Eduardo	Sercotec	Puerto Varas	1
Elizabeth and Ramon	Jessely local shop	Ensenada	1 - 2
Hernan	Correntoso Rescue team	Muermos	1
Hugo	La Pica de la Abeja Honey and Bee products	Puerto Varas	1 - 2
Irina and Jim	FoxHill Hostel	Ensenada	1 - 2
Marcela and Ronnie	Bordelago Restaurant	Ensenada	1 - 2
Marcelo	Sercotec	Puerto Varas	1
Maribel	Local shop	Correntoso	1
Miguel	Lodging	Puerto Varas	1
Nicolas	Hostel and adventure tourism	Ensenada	1
Patricio and Hernan	Bombón Oriental Restaurant	Ensenada	1
Raffaele	Entrepreneur, Tour Guide Birds Chile	Ensenada	1
Rene	Restaurant	Ensenada	1
Richard	KoKayak Adventure tourism kayak and rafting	Ensenada	1
Tomas	Bombón Oriental Restaurant	Ensenada	1 - 2
Vicky	Hostel owner	Ensenada	1
Victor	Team Leader: Emergency Team Ensenada	Ensenada	1 - 2
Carolina	Puerto Varas Council	Puerto Varas	2
Edmundo	Don Salmon Restaurant	Ensenada	2
Rudy	Microbrewery and hostel owner	Puerto Varas	2
Alex and Rosa	Hospedaje Esmeralda Hostel	Petrohué	1 - 2

Gerardo	Puerto Varas Council – social services Dideco	Puerto Varas	2
Ingrid	Private School	Puerto Varas	2
Nestor and Victor	Hostel	Ensenada	2
Matias	Local shop - hardware	Ensenada	2

Inductive Data analysis

Initially, we developed a descriptive narrative of the eruptions to establish a logical sequence of major events encapsulating the entrepreneurial responses and preparation, and to generate a chronological understanding of the Calbuco disaster. In a subsequent stage, we developed a set of first-order codes, sub-themes, and theoretical categories as the research team worked recursively between emerging themes and the raw data (Gioia et al. 2013). First, we applied exploratory coding to reveal reoccurring elements emerging before, during and after the events (Saldana 2009). We identified several patterns across the interview data, but as the coding of responses and preparedness progressed, we refined the analysis by narrowing our categorizations and loosely grouping exploratory codes into first-order codes and second order themes. Here, more refined concepts and themes such as 'affective bond with a place' leading to 'emotional place attachment' began to emerge.

In order to increase the validity of our coding process whilst retaining the richness of the interview data, our early inferences draw on radical constructionist epistemology that entails using two coders in tandem (Madill et al. 2000). Coding and interpretation of the findings are conducted collaboratively based on previous agreement on how the interview data will be addressed; for example, by focusing primarily on entrepreneurial responses rather than generalized emergency responses. Operationally, the lead author was tasked with completing the coding work independently which was then followed by a collaborative effort to interpret the results of the analysis. We invariably have situations where particular codes are interpreted differently by certain authors. In this situation, we return to our data and

engage in further discussions, arriving at a consensus as to our interpretations and labels (Gioia et al. 2013). This *grounded* procedure, in Madill et al.'s (2000) view, avoids "watered-down" interpretations of the phenomenon resulting from independent coding and inter-rater reliability procedures, dominant in rationalist approaches to data analysis.

Figure 2. Inductive analysis

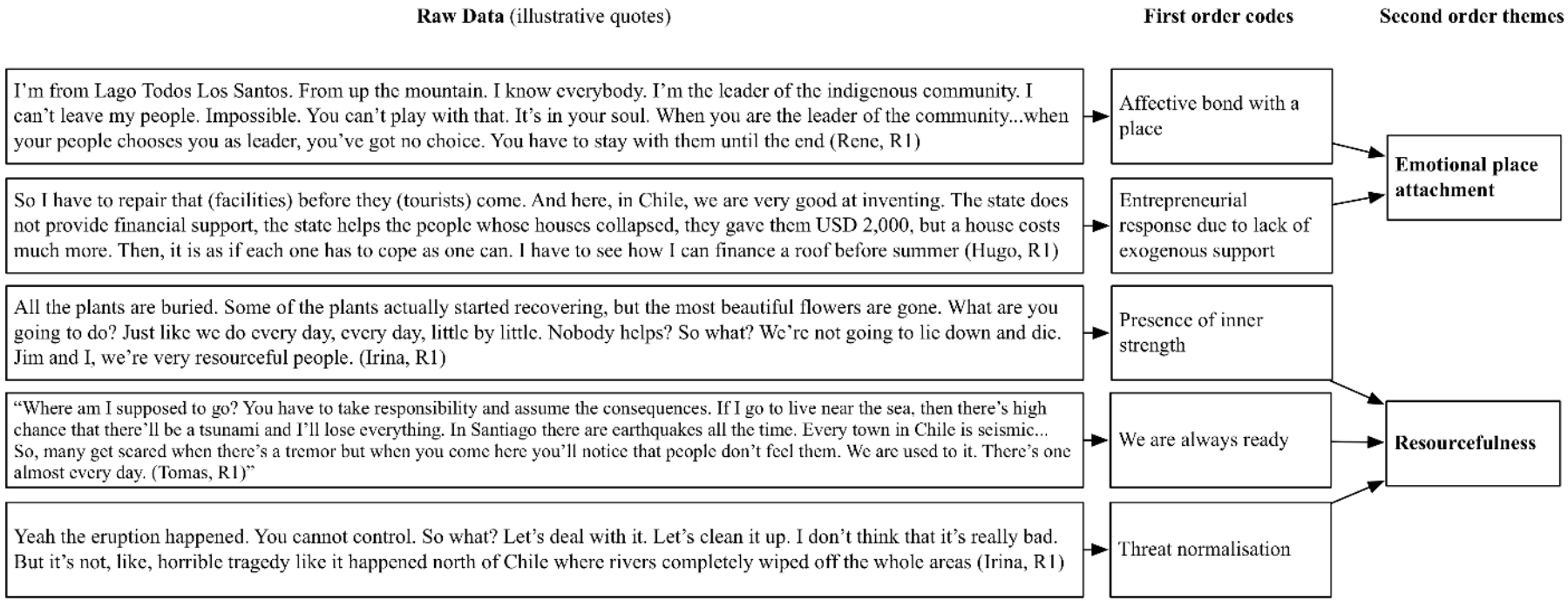


Figure 2. Inductive analysis (cont.)

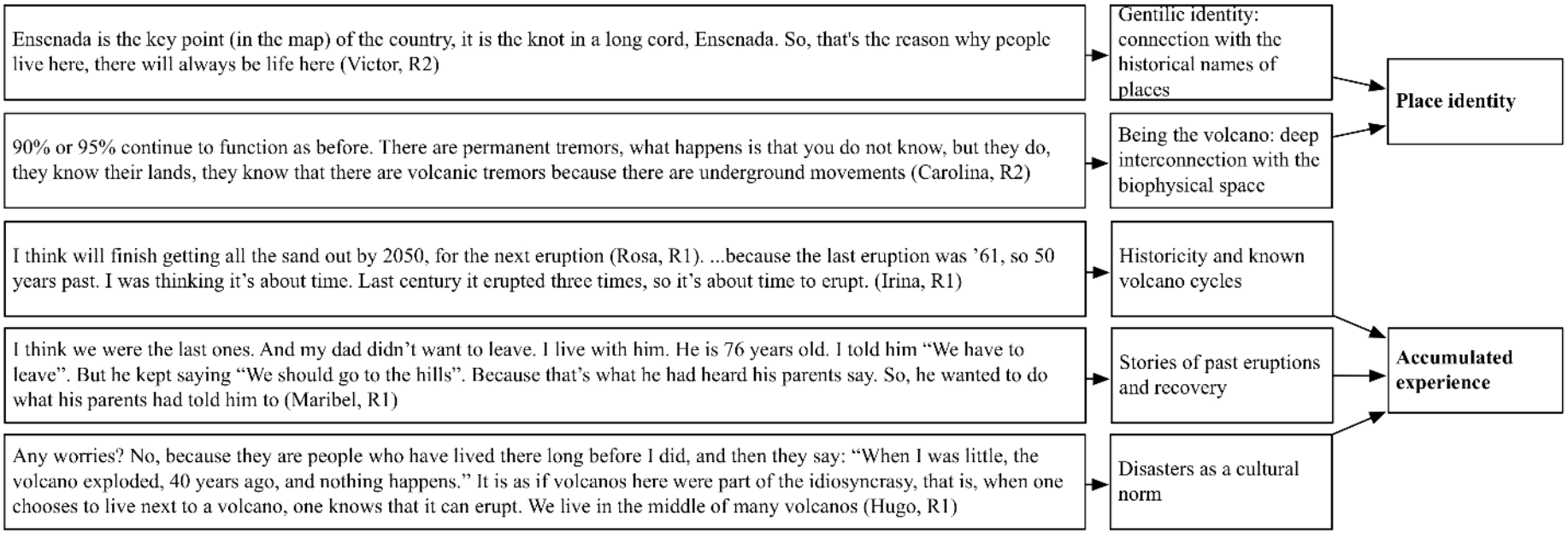


Figure 2. Inductive analysis (cont.)

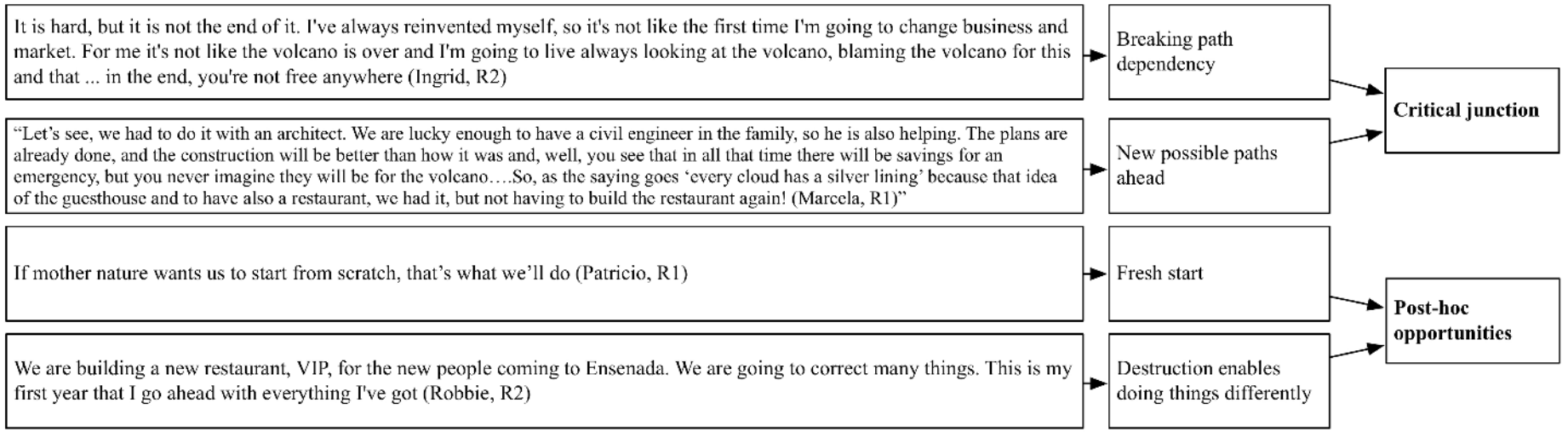


Figure 2. Inductive analysis (cont.)

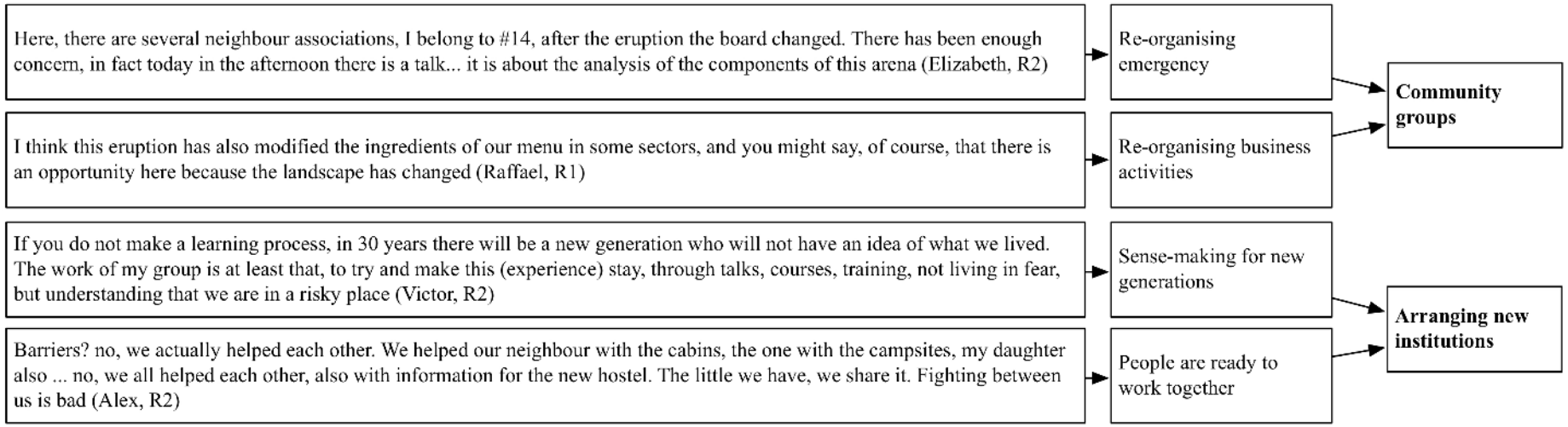


Figure 2 presents illustrative raw data (first column) leading to first-order codes (second column) and themes (third column). These, we argue, are the raw building blocks of entrepreneurial preparedness. The development of the aggregated conceptual categories emerges from both inductive and deductive reasoning, which we explain in the following section.

Deductive analysis and situational fit

In a second stage and in order to guide our inductive reasoning, we focused our attention on how the entrepreneurs reflect on the relevance of past experiences while looking introspectively at their own resources and readiness. We also focused on how they interact with the broader social and natural environments while appreciating the opportunities ahead, and how they visualize (round 1) and materialize (round 2) the reconstruction of their businesses, and prepare for the upcoming, yet unpredictable events (round 2). By using this backward, inward, outward and forward analytical artefact (Cope 2005), alongside entrepreneurial learning, disaster/recovery and crisis literature we subsequently aggregated the second-order themes into conceptual categories. This procedure enabled us to raise the level of abstraction to show the four aggregated conceptual dimensions grouping the themes, which resulted in the emergence of the building blocks of entrepreneurial preparedness under continuous threat. Table 2 provides an overview of our deductive analysis including the literatures applied to derive our deductive contribution.

Table 2. Situational fit, deductive contribution and derived attributes of entrepreneurial preparedness

Emergent themes	Description and situational fit	Derived deductive contribution	Aggregate construct	Attributes of EP
Emotional place attachment	Emotional connection to physical source of disaster and hometown. ⇒ Inward looking entrepreneurial preparedness	Emotionally charged events (Cope and Watts 2000) Emotional relationships and learning from reflection (Cope 2003; 2005) Symbolic importance of place and place orientation after disaster (Miller and Rivera 2007) Affective bond with place (Kibler et al. 2015) Practices of neighboring (Cheshire 2015)	Emotion-based introspective preparedness	Anchored reflectiveness
Resourcefulness	Appreciation of available resource base in the awakening of the disaster and aftermath. Learned resources are then incorporated into "new" resource base. ⇒ Inward looking entrepreneurial preparedness	Introspective reflection into how ready they are to continue with the business or re-enter entrepreneurship (Cope 2005) Resource gain and future stress alleviation (Hobfoll 2001) Resourcefulness for coping with stressful life events (Bradley et al. 2011)	Resource-based introspective preparedness	
Place identity	Appreciation of traditions, roots and identity. ⇒ Backward looking entrepreneurial preparedness	Looking backwards and preparedness (Cope 2005) Place identity (Gieryn 2000) Attachment to landscape and place identity after disaster (Miller and Rivera 2007) Genealogical and economic place attachment in preparation of natural disasters (Mishra et al. 2010)	Place-based retrospective preparedness	Situated experience
Accumulated experience	Consideration of previous experiences, including recovery from previous eruptions and the business continuation experiences of local small business owners. ⇒ Backward looking entrepreneurial preparedness	Learning from history and stock of experience (Reuber and Fischer 1999) Negative effect of inexperience (Doern 2016) Past-disaster experience, continuity planning and recovery (Asgary et al. 2012) Experience of crisis threats (Herbane 2012) Normalized risk and evolutionary resistance (White and O'Hare 2014)	Experience-based retrospective preparedness	
Critical junction	Disaster event leads entrepreneurs to identify a critical juncture separating current business path and previous	Critical learning events (Cope and Watts 2000)	Forward-looking preparedness	Breaking through

	mistakes from potential new business-related developments. ⇒ Forward looking entrepreneurial preparedness	Bring forward one's learning from critical events (Cope 2005) Breaking path dependency (Mahoney 2000)		
Post-hoc opportunities	Visualization of future opportunities for business recovery or continuation after disaster. ⇒ Forward looking entrepreneurial preparedness	Future business growth (Cope 2005) Windows of post-disaster development opportunities (Asgary et al. 2006) Bricolage (Baker and Nelson 2005)	Opportunity-based forward-looking entrepreneurial preparedness	
New community groups	New social groups emerging from spontaneous collective (business / recovery) efforts. Visualization of opportunities can be materialized through these new community groups. ⇒ Outward looking entrepreneurial preparedness	Interaction with, and learning about, the wider environment (Cope 2005) Social bricolage and spontaneous collective effort (Johannisson and Olaison 2007) Situated learning (Pittaway and Thorpe 2012) Pre-empting neighboring practices, patterns of pre-disaster neighboring and community resilience (Cheshire 2015) Interdependency belief (Dinger et al. 2012) Cohesiveness and unification during situations of collective stress (Drabek and McEntire 2003)	Community-based interconnected entrepreneurial preparedness	Reaching out
Arranging new institutions	Consolidation of emergent community groups leads to new (local) institutional arrangements, which cement future business reactions to new disasters/crisis. ⇒ Outward looking entrepreneurial preparedness	Patterns of change in social structures (Kreps and Bosworth 1993) Crafting new institutional arrangements (Paton 2006) Institutional work (Lawrence and Suddaby 2006) Looking outwards and preparedness (Cope 2005) Adaptation of local institutions (Matarrita-Cascante and Trejos 2013) Taking on new disaster-related tasks and responsibilities (Drabek and McEntire 2003)	Interconnected entrepreneurial preparedness	

Findings

In the particular context of communities living under continuous threat of natural disasters and resource loss (Hobfoll 2001), our analysis identified that local entrepreneurs had developed a notable type of entrepreneurial preparedness tailored to the specific disaster situation. This brings into consideration aspects of the natural environment in understanding the entrepreneur's previous experience as they look backwards and inwards. In addition, it emphasizes how, after recently experiencing a natural disaster, preparedness becomes reinforced. From our abductive analysis, we derive four distinct building blocks of entrepreneurial preparedness in a context of continuous threat, which may facilitate or enable an adequate entrepreneurial response to disaster, namely: *anchored reflectiveness, situated experience, breaking through and reaching out.*

Most notably, these elements are not developed merely in response to one particular traumatic instance, though they become more salient during evident threat. We noticed through our empirical work and abductive theorizing that entrepreneurial preparedness is developed over time based on stories, learning, reinforced identity, accumulated experience, necessity, among others, and gets nurtured with every new alert, crisis or disaster. Consequently, we infer that all communities living in a context of continuous threat have some degree of entrepreneurial preparedness, which can manifest in a variety of ways depending on how the attributes are configured in a particular context. In the following, we provide a description of the four key conceptual categories highlighted in Table 2 (i.e. attributes of entrepreneurial preparedness in a context of continuous threat), and explain how these elements enable adequate responses.

Anchored reflectiveness and entrepreneurial preparedness

Anchored reflectiveness, as a component of entrepreneurial preparedness in a context of

continuous threat, is characterized by inward *emotional place attachment* and *resourcefulness*. In the context of the Calbuco disaster, preparedness was evident by the entrepreneur's introspection of one's self amidst the peril of the crisis. In Ensenada, the place was particularly relevant to the entrepreneur's introspection and need to be resourceful in challenging times. We refer to this introspection as emotional place attachment—i.e. "entrepreneur's feelings about and affective bond with a place and/or its residents" (Kibler et al. 2015: 26). This bond is evident from the perspective of one entrepreneur:

> I am the only businessman, of all entrepreneurs in Ensenada, I am the only one born and raised here, so I want to continue living here, where I have been all my life (Ronnie, R2)

This emotional place attachment was consistent across our sample, suggesting that the introspective aspect of preparedness relates to a bond to the community or locale which is symbolically important to the entrepreneur (Miller and Rivera 2007), triggered by the emotional event of the eruption which is sustained through the emotion of community relationships (Cope 2003; Cope and Watts 2000).

The idea of emotional place attachment is also linked to a broader contextual factor concerning the degree of exogenous support available to the entrepreneurs. With the expected absence of appropriate institutional mechanisms to support the entrepreneurial response, individuals recognized that the recovery of the place fundamentally depends on their own "practices of neighboring" (Cheshire 2015). Irina and Jim, whose hostel and outer grounds were seriously affected, stated that "you have to do it yourself. You can expect or not expect help from others but you have to have your own plan" (Irina, R1). This introspective urge, "inner strength" (Marcela, R1), and initiative taking despite the lack of institutional support seems critical to understanding the response. The following quote illustrates the emotional side of an entrepreneurial response under an evident lack of exogenous institutional support:

> Everybody in this area is in the same position. What are you going to do? Just sit down and cry? It doesn't help. Plus, when you start doing it, even less people are willing to help you. When you kind of have a cheerful attitude it's kind of like you attract help to your place. But once you start crying, "Oh, poor me," then everything goes away. It disappears, all the help, because nobody wants to listen to you cause people have their own lives, their problems, their sicknesses, their death in the family, or something, so I think do it yourself first. This is the most important. (Irina, R1)

This inner strength formed the basis of the resourcefulness of the entrepreneurs. The introspective component of preparedness considers how ready one is to be entrepreneurial (Cope 2005). The nature of the event and its continuous threat to the entrepreneur's activities and lives demonstrates that they always need to be resourceful and therefore ready. As Jim highlights, people would (re)build their properties by the roadside anticipating their need to escape the volcanic rock and ash when it inevitably hits:

> So now I understand why Chileans want to buy properties as close as possible to the main road. First I didn't understand. I thought, "This is dust. This is noise. More chance to get robbed." But Chileans know whatever happens you have to get out of the area as fast as possible. (Jim, R1)

Such resourcefulness can similarly be understood by how the threat is internally normalized within the lives of the entrepreneurs in Ensenada and constitutes one of the everyday aspects of being a business owner there. Although the eruption of the volcano still represents a traumatic event or crisis requiring resourcefulness to ameliorate that stress (Hobfoll 2001), this becomes normalized as an ever present condition for being prepared for disaster. Despite the obvious threats to human life, the need for resourcefulness was internalized as a result of the threat of the volcano being normal to them, partially as a result of the unique prevalence of natural disasters in Chile (Raffaele, R1).

As such, our data highlight the introspective nature of entrepreneurial preparedness in a context of continuous threat. In particular, our data highlights that entrepreneurs demonstrate a notable *emotional place-attachment* as a resulted of their bond to the people in Ensenada, but also in the context of limited institutional support, meaning that the recovery of the place would depend upon their actions. This introspection also required

resourcefulness in terms of inner strength and a need for constant vigilance to the possibility of the disaster, which together constitutes an understanding of introspective preparedness as *anchored reflectiveness.*

Situated experience and entrepreneurial preparedness

Situated experience is a form of retrospective entrepreneurial preparedness in a context of continuous threat, characterized by place identity and accumulated experiences. In its retrospective dimension, preparedness concerns the stock of experiences of the situation that the entrepreneur holds (Reuber and Fischer 1999). We identify that these experiences do not necessarily need to be entrepreneurial in nature (i.e. prior experiences of how businesses respond to disaster) but that they are nonetheless an important ingredient for understanding the broader entrepreneurial response of the entrepreneurs in Ensenada. Consistent with the introspective dimension of preparedness, we identify that entrepreneurs demonstrate a notable connection to the cultural history of Ensenada. For instance, our interviews indicate a deep connection with the historical names[10] (e.g. Quellaipe) attached to the physical space with the volcano actually seen as an active component of the community. This produces a strong *place identity* (Gieryn 2000) amongst the entrepreneurs thus elevating their preparedness through this identity (Mishra et al. 2010):

> …like a lifestyle, we have to learn to coexist with nature and nature will suddenly punish us as the Calbuco punished us. It is part of learning and we will have to keep fighting. We live between two volcanoes, which are active, we have to be prepared (Rudy, R2)

This place identity is a particularly key ingredient to the retrospective dimension of entrepreneurial preparedness in a context of continuous threat because it indicates an acceptance of the risks of living in such close proximity to the volcano. Deep interconnections with the biophysical space of the volcano and the community is a part of their everyday lives which is not disrupted by new eruptions but merely reinforced (Miller

and Rivera 2007). This experience of place was particularly pertinent to their entrepreneurial preparedness in a context of continuous threat. But the entrepreneurs also *accumulated experience* in a number of other ways. The cyclical nature of volcano eruptions in the community's history creates an expectancy amongst the residents about its inevitable arrival, impact and normality (White and O'Hare 2014). In addition, from one generation to the next, stories are regularly exchanged between residents and business owners in the community about the volcano.

Feeding into this *accumulated experience* is the perception that disasters are a cultural norm in Ensenada and more generally in Chile; the volcano is part of the entrepreneur's lives but not the risks attached to it. With over 2,000 volcanoes, 900 of which are active, volcanos are a big part of the Chilean culture. This historical experience of disaster typically aids individuals' preparedness and recovery (Asgary et al. 2012; Herbane 2013) with negative ramifications under contrary conditions (Doern 2016). Although there does not seem to be much accumulated experience of immediate preparedness in a business sense this was undoubtedly a critical ingredient in understanding how the entrepreneurs respond to the disaster. Rudy outlines this disaster and the accumulated experience following the 2015 eruption:

> What I can take away from this is that I am developing a system to protect my solar panels; because each one costs around 200 thousand pesos and I have 20 of those. So I am devising a system that in 5 minutes has them [solar panels] covered, with that I am calm. This is the learning - we live among volcanoes, so in the subconscious we know we have to be prepared, do not leave vehicles zero fuel, we always have to have fuel to be able to leave in case of emergency. As we realized, the volcano Calbuco to us did not announce anything, but from one second to another exploded and, within 10 minutes, stones were already falling (Rudy, R2)

The retrospective dimension of preparedness – *situated experience* – is understood by the entrepreneur's prior experiences. Our data highlight that, in a context of continuous threat, this can be understood through the entrepreneurs' identity to place based on their connection to the community and an accumulation of experiences based on history, stories and norms of

disasters. This retrospective component of preparedness provides a vital dimension in understanding entrepreneurial action in response to the Calbuco disaster.

Breaking through and entrepreneurial preparedness

The third building block of entrepreneurial preparedness in a context of continuous threat, breaking through, pertains a form of forward-looking reflection/reaction, which is characterized by the presence of critical junctions and post-hoc opportunities. *Breaking through* requires us to consider how entrepreneurs visualize the future in terms of their business propositions post disaster and in the context of its continuous threat. We identify the importance of the disaster event as a *critical junction* which leads entrepreneurs to consider and enact *post-hoc opportunities.* These concepts emphasize the elements of opportunity as a result of the disaster with the unfolding possibility of a fresh start and a search for new business ideas.

In interpreting the responses of the entrepreneurs, we identified how the disaster acts as a *critical junction* in their entrepreneurial and personal journeys, allowing them to reflect upon new paths and a fresh start for the business and themselves. Such types of key events can either open or confirm the possible paths ahead, i.e. critical junctures and focal points (Cope 2005). While the former are transitional situations in which actors have the possibility to make choices that would open up a new path, the latter demonstrate, manifest, and consolidate the path dependence of a direction taken before (Mahoney 2000). In breaking their path dependency, the effects of Calbuco opened up new possibilities for the entrepreneurs:

> First, we'll rebuild the one we had. We need to have the main restaurant ready….and people who want to see what happened here and want to see the Calbuco. It's funny but it's the truth. And that's good for us. There's always a silver lining…we want to open a souvenir shop (Hernan, R1)

This was consistently articulated across our sample of entrepreneurs who all viewed the physical damage to their business premises/locations as actually providing with a clean break from which they can conceive of new ways of operating.

One aspect of preparedness in a context of continuous threat is how the entrepreneurs visualize changes in the future with the possibility of new paths ahead. However, they also responded particularly instrumentally with the volcano providing windows of opportunity for new paths (Asgary et al. 2006). For instance, Matias (R2) had started using the materials from the eruption to complement the products he had been selling in his hardware store. Others were seeking to capitalize on the extra publicity brought by the volcano, the new tourists interested in seeing first-hand the aftermath of the eruption and/or adapting methods of the service delivery to accommodate the story of the recent event. Taken together, our observations highlight that the disaster broke the path dependency of the entrepreneurial journey with this *critical junction* allowing them to consider new possibilities. These new possibilities manifested themselves in a resourceful identification of *post-hoc opportunities* representing an instrumental use of the disaster situation. This constitutes an understanding of preparedness in a context of continuous threat in terms of how entrepreneurs look forward by *breaking through.* Our denomination of post-hoc opportunities stems from the fact that it is the disaster and the desire to reinitiate that enables the identification of opportunities and subsequent entrepreneurial action, rather than the mere recognition of changes in market conditions.

Reaching out and entrepreneurial preparedness

Reaching out pertains to the interconnected nature of entrepreneurial preparedness in a context of continuous threat. Our findings suggest that reaching out is characterized by the outward-looking dimension of preparedness which emphasizes how entrepreneurs interact

with others. Here, we identified two key features of the outward looking dimension: the emergence of new *community groups* and the *arrangement of new institutions*. In particular, we observed two new community groups important for post-disaster community recovery – those which focus on organizing emergency activities and those that look at forming business activities. In turn, such enabling and maintenance of the local community through emergency groups, informal business networks and free-yet-organized labor also indicates how the interconnectedness of preparedness organizes new institutional arrangements relevant for post-disaster resilience (Paton 2006). This was, for instance, emphasized by how the entrepreneurs stressed the need to continue the institutional learning from the experience so as to inform future generations (Victor, R2).

Therefore, our observations suggest that the interrelation between new community groups and the creation of new arrangements re-enforced the accumulated experiences of community members of and beyond the community and ultimately their own preparedness. In other words, the reciprocity between community members was crucial for the organizing of new institutions (Lawrence and Suddaby 2006), where local actors' actions are able to co-create new, and maintain existing, relationships important for compensating for the absence of wider institutional post-disaster support (Patricio, R1).

This self-organizing behavior and reciprocity was a common feature throughout the community and seemingly an important part of understanding how the community responded. Several entrepreneurs informed us that were not willing to wait for the government to set up a program, and despite the potential consequence of being assessed and allocated some reconstruction funding, initiated disaster response activities among themselves.

> Regarding our preparedness, we now have the idea of living together with the volcanoes and be prepared for any type of emergency. Before [the two eruptions] we saw the volcanoes as something far away, and had only heard of the eruption in 1961, without the hard feelings

> attached to it. Now we know that we need to prepare, know what to do, how to react. We have an emergency kit. As a community we are organizing ourselves, we have conducted a small investigation about the bridges that could collapse, the roads to be taken to leave. So this [eruption] experience helped us to be more prepared. As a trader, as an entrepreneur, it gives us more strength to face new challenges, this [group] helped us to have more strength, to continue with what we are doing and to realize that with help, with effort and work we can move forward. (Elizabeth, R2).

The emergence of new community groups and related creation of new institutional arrangements in the community seemed symbolic for the important role of the entrepreneurs in 'reaching out' to help and be helped.

This interconnected nature of preparedness in a context of continuous threat represents a kind of 'social bricolage' whereby entrepreneurs self-organize within the community and draw from local knowledge (Johannisson and Olaison 2007) and relies on the interdependency between community actors to construct necessary responses to the disaster (Dinger et al. 2012). The necessary institutional work involves entrepreneurs taking on key community roles and responsibilities (Drabek and McEntire 2003), allowing the community to adapt to the situation accordingly (Matarrita-Cascante and Trejos 2013). It is this community aspect coupled with evidence of new institutional arrangements that constitute the *reaching out* of entrepreneurial preparedness in a context of continuous threat.

Discussion

To date, the crisis literature on post-disaster entrepreneurship has focused on 'entrepreneurial' responses in the aftermath of a natural disaster (e.g. Williams and Shepherd 2016a; Shepherd and Williams 2014) but has neglected to discuss this under conditions where threats are continuous. Despite an increased interest in post-disaster entrepreneurship, what exists before and happens during disaster events in communities under continuous threat remains uncovered and there is the need to know how entrepreneurial community members prepare themselves to continue with their commercial activities or eventually start

new ones. Doing so represents an empirical challenge, both logistically and financially. Entrepreneurial preparedness by definition is a cumulative learning process (Williams et al. 2017) that brings together numerous collective life experiences and histories to explain entrepreneurial behavior (Cope 2005). Our research team happened to have the opportunity to be able to capture preparation and subsequent responses during the two major Calbuco volcano eruptions in 2015 and 2016 in Chile, serving as the empirical base for our study.

Building on our analysis, we were able to uncover the notion of entrepreneurial preparedness in a context of continuous threat. We elaborate on this notion of entrepreneurial preparedness as a distinct set of cognitive, social, historical and cultural resources that prepare communities and equip local actors for an entrepreneurial response facing a crisis or disaster. In particular, our findings demonstrate four distinct yet interrelated building blocks of entrepreneurial preparedness in a context of continuous threat, namely: *anchored reflectiveness, situated experience, breaking through and reaching out.* Theorizing from these results, we propose that our concept of entrepreneurial preparedness under continuous threat of natural disasters develops an understanding of – as described by Williams and Vorley (2017) – an entrepreneurs' ability not only to bounce back but also to bounce forward following a crisis event. We suggest that entrepreneurial preparedness under continuous threat helps entrepreneurs move from situating their experience and reflecting on the needs to re-build their businesses (*bouncing back*) to searching for new opportunities and enacting new ideas for development after the crisis event (*bouncing forward*).

In the second and third columns of Figure 2, we describe the cognitive, social, historical and cultural roots of all four attributes. Accumulated experience, for example, derives from knowledge of volcano cycles, stories of past eruptions and disasters as a cultural norm, making retrospective entrepreneurial preparedness in part a historical and cultural attribute. Despite the intertwined nature of entrepreneurial preparedness in a context of

continuous threat, we do not assume here that all four attributes are necessary or need to be present in the same degree to equip communities with a certain level of resources. Nevertheless, our introduced concept of entrepreneurial preparedness is arguably a central element in the life of communities in different parts of the world, which are increasingly exposed to continuous threats derived from the growing effects of climate change such as flooding, wildfires, and extreme weather events; as well as social unrest, such as violence, discrimination, and ethnic tensions.

While some settings enjoy a stronger set of supportive institutional arrangements, the increasing severity of the events make practically any institutionalized response not good enough in effectively addressing the specific disaster needs and quickly recover an affected area (Perry 2009). No government institution can be adequately prepared for the second largest earthquake in recorded history (Chile in 2010), or the widespread flooding accompanying the Storm Desmond, affecting vast regions of the United Kingdom and Ireland in 2015, or the second largest wildfire of the century (Chile in 2017), for example. Doing so would require an oversized, ineffective and perhaps dormant institutional arrangement, which certainly no government is willing to put in place. Institutional preparedness is relevant in emergencies (McEntire and Myers 2004) and can potentially contribute to organize initial help and a certain level of action in the aftermath of a disaster. However, in life-threatening situations, in particular in those areas continuously exposed, victims normally do not wait for institutions to react, finding their own 'entrepreneurial' ways of ameliorating the effect of crisis, shocks and disasters. This makes entrepreneurial preparedness in contexts of continuous threat a timely and relevant notion requiring further attention. Despite this, it is important to note that any derived measure of entrepreneurial preparedness, while it is not the purpose of this paper to propose one, should be necessarily formative rather than reflective in

nature, suggesting that the four distinct attributes of preparedness reinforce each other contributing to an overall level of entrepreneurial preparedness.

Entrepreneurial preparedness is developed and fostered mostly through accumulated experience and sense of place and identity, and articulated when needed through social links and prospective reasoning. If desirable, we cannot wait for a community to go through ten disasters to learn and develop their own entrepreneurial preparedness. We then wonder whether entrepreneurial preparedness can be learned or artificially nurtured, and if so, how attributes such as accumulated experience can be transferred. Thus, we find particularly relevant and necessary at this stage a more critical reflection on the concept by acknowledging its limitations, testing its boundaries and discussing its generalizability if and when the parameters are modified. For example, what does entrepreneurial preparedness look like when the nature of the disaster is different or strike in places not living under evident continuous threat? If the critical parameters in Figure 2 are changed, we cannot be certain that entrepreneurial preparedness will emerge at all. We do know, however, that entrepreneurial preparedness is a fundamental community resource and a key part of the socio-economic resilience of communities living under continuous threat, irrespective of its configuration.

Contributions

Our work makes three key conceptual contributions and a methodological one. First, we contribute to the emerging post-disaster entrepreneurship literature (e.g. Linnenluecke and McKnight, 2017; McKnight and Linnenluecke 2016; Williams and Shepherd 2016a) by introducing the concept of entrepreneurial preparedness and its attributes in contexts living under continuous threat of natural disasters. Our analysis demonstrates the importance of four attributes of entrepreneurial preparedness that, we argue, offer a novel explanation of the

antecedents of entrepreneurs' performance and/or introduction of new business activities in a context of continuous threat. Entrepreneurial preparedness enables a deeper understanding of how entrepreneurial community members prepare themselves to react to disasters under the specific conditions where such crisis events are rather the norm. By doing so, we expand the dominant theme in the crisis research on entrepreneurship from one-off and unanticipated crises (Doern 2016) to an understanding of how entrepreneurs constantly threatened with the loss of resources (Hobfoll 2001) prepare themselves to manage the actual crisis event. Accordingly, our study offers also a first, robust base to further empirical work and theorizing, given the close conceptual links between the yet under-explored antecedents of disaster reactions and post-disaster entrepreneurial behavior.

Second, we contribute to the crisis management literature at the intersection of entrepreneurship and resilience (McKnight and Linnenluecke 2016; Monllor and Murphy, 2017; Williams and Vorley 2017; Williams et al. 2017). Our study provides novel insight into how entrepreneurial preparedness in a context of continuous threat helps develop entrepreneurs' resilience to be able to 'bounce back' but also to 'bounce forward' (Williams and Vorley 2017) following a crisis. In particular, we suggest that entrepreneurial preparedness in a context of continuous threat helps entrepreneurs move from situating their disaster experience and reflecting on the instant needs to re-build their ventures (*bouncing back*) to searching for new post-hoc opportunities and enacting new ideas for venture development because of the crisis event (*bouncing forward*). Recently, Williams et al. (2017: 754) have also called for crisis research that gains "a deeper understanding of what happens during this period of learning, [since] then perhaps learning can be accelerated or otherwise enhanced". Our findings respond to this call by providing first insights on how entrepreneurial preparedness in a context of continuous threat is developed over time based on stories, reinforced identity, accumulated experience, necessity, among others, and gets

nurtured with every new alert, crisis or disaster.

Third, our work offers a new way of understanding how 'ordinary organizations' (micro-level) support the development of resilient infrastructures in a community (meso-level) (van Der Vegt et al. 2015) and so further compensate for the failure of macro-level – (inter-)national and regional – institutional disaster support (Cheshire 2015; Paton 2006) before and after a crisis event. Our study demonstrates that entrepreneurial preparedness in a context of continuous threat reflects emerging practices that go beyond post-disaster institutional preparedness, which is explained by the four components of preparedness operating at micro and meso levels, largely neglected in institutional preparedness literature and practice. In the disaster management literature, preparedness is a concept that is anchored with centralized authority necessary to respond to disasters (Paton 2006; Tierney 2012), due to notions of moral hazard; most residents individually shy away from preparing because it is costly, but would benefit from preparation efforts of other community members (Storr et al. 2015). Our study thus transfers the notion of macro-level disaster preparedness to the local level, and at the same time suggests that entrepreneurial preparedness is relevant for the pre- and post-disaster phases. Hence, we suggest that entrepreneurial response and preparation serves as a fruitful concept to understand how local practices (Cheshire 2015) compensate for the incapability of national and regional institutions to address the recovery of affected communities (Perry 2009). If community members believe themselves to be powerless, recovery is likely to be stunted regardless of external assistance (Storr et al. 2015). In contrast, entrepreneurial preparedness also adds to community members' beliefs in their own practices, adding to a community's resilience before and after a crisis event. Subsequently, we concur with Cheshire's (2015) argument that research on disaster preparedness needs to take into account that "community resilience should be embedded within local social

practices such as neighboring, but that neighboring itself cannot be engineered into existence" (p.1081).

Methodologically, our work offers a unique empirical context and approach to accessing first-hand data collection in a challenging research context. We were able to capture our phenomenon of interest in a context of continuous threat within a country that has naturally used entrepreneurship as a response mechanism. Doing so allowed us to provide novel insight into entrepreneurial behavior before, during and after an already unique series of volcanic eruptions, and thus to move beyond one-off events based on retrospective data as used in previous post-disaster studies. We hope our novel methodological approach to post-disaster entrepreneurship will encourage future research and theorizing on the link between entrepreneurship, institutions and community resilience.

Elaborating on and beyond boundary conditions: future research

In comparison to other documented experiences in Chile (e.g. 2010 Earthquake and 2014 Great Fire of Valparaíso), we note that the boundary conditions of our study – i.e. communities living in a context of continuous threat on the slope of an active volcano – warrant a socio-geographic delineation of the phenomenon described and explained in this paper. How different concentrations of threat effect and size of geographical locations influence the type of response and learned preparedness of the individuals and communities living in those particular contexts is important to consider. It points us towards an inverted U curve, where concentrated disasters affecting a small number of households induce a place-attached emotional response (Kibler et al., 2015) characterized by vulnerability, panicking and desperation. On the other end of the curve, with disasters covering a large area with widespread effects, as in the case of the 2010 earthquake in Santiago, for example, we notice the emergence of fragmented groups and save yourself reactions (Dussaillant and Guzmán 2014). Here, the absence of cohesion is triggering an individualistic survival mode (e.g.

looting of supplies and vandalism leading to curfew, despite the free provision of supplies available). This line of argumentation is supported, for instance by Doern's (2016) work on the 2011 London riots or Dutta's (2016) work on natural disasters in California between 1991-2016.

In the middle of the curve, we find cases such as in our study: Ensenada, Puerto Varas, and Chapo. These are small-size towns, where the initial reaction is certainly emotional, yet turning rapidly into a rational response, driven by social cohesion and identity, which in turn enables faster recovery and the development of stronger entrepreneurial preparedness. Therefore, we suspect that entrepreneurial preparedness works better and becomes more salient in small to medium-size towns with stronger embeddedness, cohesion and reciprocity, where the effects of the crisis or disaster are shared by all inhabitants.

Given the boundary conditions we suspect exist, where entrepreneurial preparedness is more likely to happen in small towns in a context of continuous threat, the findings should be interpreted with their limitations in mind. We do not examine variance in the impact of preparedness at the individual, organizational and/or community levels and over a longer period of time. Hence, there are a dearth of studies that help expand a place-based and temporal perspective of the complexity involved in understanding pre- and post-crisis entrepreneurial preparedness. This is relevant for understanding how this influences individual entrepreneurs' actions and wellbeing as well as supports the broader local community recovery and development process. Further, given the strong social cohesion we argue exists in a community context of continuous threat, we believe this is also an important area for future research to explore in contexts of one-off crises. Longitudinal research designs are particularly vital for an appreciation of preparedness, entrepreneurial practices and long-term recovery or change in a given community. Future research could also explore the factors underlying such inferred variance, which we argue derives from stronger social cohesion,

place-based identity and accumulated experience facilitated by size. This is yet to be tested but we believe that the building blocks of entrepreneurial preparedness in a context of continuous threat, identified in this paper, holds further promise for understanding entrepreneurial practices before, during and after disaster events.

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Endnotes

[1] More information about volcanic alert levels in Chile can be found at: http://www.sernageomin.cl/abc/doc/alertawebvolca.pdf. Source SERNAGEOMIN

[2] Global Volcanism Program, 2015. Report on Calbuco (Chile). In: Sennert, S K (ed.), Weekly Volcanic Activity Report, 19 August-25 August 2015. Smithsonian Institution and US Geological Survey. Available at: https://volcano.si.edu/volcano.cfm?vn=358020

[3] Official statement and further details on the immediate response. Available at: http://www.interior.gob.cl/noticias/2015/04/22/gobierno-ordena-evacuacion-preventiva-por-erupcion-de-volcan-calbuco

[4] Available at http://erccportal.jrc.ec.europa.eu/ECHO-Flash/Echo-Flash-Item/oid/6152/xmps/19740)

[5] Sercotec Report Subsidios a afectados por volcán Calbuco available at: http://www.sercotec.cl/QuiénesSomos/Noticias/SubsidiosaafectadosporvolcánCalbuco.aspx

[6] In Chile, a yellow volcanic alert is established when the activity in the volcano surpasses the baseline activity and is unstable and intermittent. Normally, a yellow alert is issued in presence of frequent tremors, weak pyroclastic emissions, morphological changes, noise and volcanic gases. This alter activates the civil protection system and lasts initially 20 days. Source: SERNAGEOMIN.

[7] Yellow Alert Announcement. Available at: http://www.sernageomin.cl/reportesVolcanes/20160623011936963REAV_20160623_1320_Calbuco.pdf.

[8] Se declara Alerta Amarilla para volcán Calbuco. ONEMI Announcement (Spanish). Available at http://www.onemi.cl/noticia/se-declara-alerta-amarilla-para-volcan-calbuco/

[9] Calbuco has had 36 confirmed eruptions, 13 of which have been recorded in historical times. 20th century eruptions took place in 1906, 1907, 1909, 1911, 1917, 1929, 1932, 1945, 1961, 1972, and 2015. Source: Smithsonian Institute, available at: http://volcano.si.edu/volcano.cfm?vn=358020&vtab=Eruptions

[10] The Calbuco Volcano has historically received several names. The name Kallfu-Ko (blue water) was given by the Huilliches and Chonos native tribes. Over the years, it has also been known and called by the locals as: Quellaipe, Chunnauca, Guanahuca, Guanaque, Huaneque, Guanalnarca y Nauga.