

Relocation: Sense of community, connection to place, and the role of culture following a volcanic eruption

Thesis submitted in fulfilment of the requirements of the degree of
Doctor of Philosophy

Dicky C. Pelupessy

College of Health and Biomedicine
Victoria University

Melbourne

2016

Abstract

The consequences of disaster can take many forms; and relocation adds particular complexities to community recovery. Relocation, as is mostly intended, is to avoid or reduce physical susceptibility to future disasters, however, it can also create social and cultural challenges for relocated communities. The present study investigated the communities and their members, which were relocated following the 2010 eruption of the Merapi volcano in Indonesia. The present study aimed to explore the consequences of relocation for sense of community and connection to place.

Recognising the significance of culture, the present study also examined how an understanding of the cultural contexts and rootedness of sense of community and connection to place can facilitate, or inhibit post-disaster recovery. The study adopted the design framework of constructivist grounded theory for describing the experiences of community in relation to sense of community and connection to place. Three months of fieldwork was conducted to simultaneously collect and analyse data, where data were gathered through: interviews with community members and government and aid agencies' representatives; focus groups with community members; observations; and daily interaction with community that included a 'hanging out' process. By the end of the fieldwork, twenty interviews and four focus groups had been formally conducted in combination with observations and daily interactions that involved conversations from which systematic notes were taken. Four themes were derived following the process of coding and theoretical categorisation. The themes were: (1) embracing the volcano for living one's life, (2) losing an integrated lived space, losing the meaning of place, (3) benefits and disadvantages of aid, and (4) centring "*gotong royong*" (mutual assistance) as a key to community recovery. These themes suggested: (1) relocation is limited by its focus on physical aspects of disaster

and disaster recovery, (2) relocation is limited in its contribution to the redevelopment of meaningful connection to place, which resulted in an inhibited development of sense of community, and the disruption of place attachment and place identity. The themes also suggested that culture, as both a system of meaning and as a patterned practice, characterised the adaptive ecological interactions between people and their meaningful environments, and meaning of place and experiences with place that constituted sense of community, place attachment, and place identity. The present study concludes by suggesting that post-disaster recovery efforts could be enhanced by considering the importance of sense of community and connection to place, and that these factors must be considered within the local cultural context in order for a more meaningful community recovery to take place.

Declaration

I, Dicky C. Pelupessy, declare that the PhD thesis entitled “Relocation: Sense of community, connection to place, and the role of culture following a volcanic eruption”, is no more than 100 000 words in length, including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole, or in part, for the award for any other degree or diploma. Except where otherwise indicated, this thesis is my own work.

Signature: _____ Date: _____

Acknowledgements

It takes a universe to finish this thesis. I owe a great deal of thanks to many people whose support, shown in many ways, made this intellectual journey complete.

First and foremost, I am hugely indebted to Professor Adrian Fisher, my principal supervisor. This acknowledgement cannot express how your presence as a supervisor, a teacher, and eventually a friend is deeply acknowledged. I would say without your sage knowledge, guidance, and patience I could not have completed my PhD. You know how unsure I was taking the path of my research. Your encouragement ceased my worry. Your support for my professional development aside from completing this thesis is a privilege that not every PhD student can have. I will greatly miss the moments of having discussion and conversation with you.

I am also deeply indebted to Dr. Meagan Tyler, my co-supervisor. It is the constructive combination between you and Adrian that brought this thesis to its completion. Your incisive mind indispensably helped me to develop the construction of this thesis step-by-step, inch-by-inch. I could not be more grateful for your dedication and enthusiasm despite your unavoidable move to ‘the city’ halfway through the thesis completion.

I would like to thank my circle of support in the Victoria University community. Chris Sonn, for intellectual stimulation and critical encouragement into the “qualitative” world. I found it like a whole new world that is invaluablely exciting, yet challenging. My fellow PhD travellers: Amy, Kirsten, Leila, Linda, Liya, and Mema, for their company and the ‘joy’ we shared along the way being on the same journey, in the same office. Special mention to my fellow PhD travellers from Indonesia: Wawan, Nanang, Monica, and Bu Dwi, for the friendship and ‘familyhood’ that we shared along our time in Footscray. I just know you as our destiny brought us to

meet at Victoria University. Our bond surely gives us something to remember about our PhD journey and to craft the future we want to make in our country. I would also like to thank Grace Schirripa at the Graduate Research Centre (GRC) for her administrative support from the beginning to the end of my study at Victoria University. I would like to acknowledge Dr. Rachel Le Rossignol for providing professional copyediting and proofreading services, according to the guidelines laid out in the university-endorsed national 'Guidelines for editing research theses'.

I would also like to thank Diane Bretherton, Siew Fang Law, and Chris Francke for their support in different ways that made my journey in Melbourne worth taking. I am also thankful for the support I got from the other place of my journey: the dean of the Faculty of Psychology at Universitas Indonesia and my colleagues at the Social Psychology department who also gave their support in any way they could. I would like also to thank Professor Atsushi Tanaka of the University of Tokyo and Dr. Yasuhito Jibiki of the Tohoku University who gave me an opportunity to broaden my intellectual horizon during my research fellowship in the University of Tokyo, Japan. Certainly, I would extend my gratitude to then Indonesian Ministry of Education, now the Ministry of Research, Technology, and Higher Education that granted me the DIKTI scholarship to pursue a PhD degree at Victoria University.

This thesis was not possible to complete without the participants of my study and those who assisted me during the fieldwork. I would like also to thank Remon, Indra, Kang ET of UPN Yogyakarta, and surely the people of Petung who sincerely accepted me to be part of them even though for quite a short period of time.

Last but not least, it is my family, my big family that my gratitude goes to. It is beyond what I can express my gratitude to: my wonderful parents and parents-in-law, my supportive sisters, sisters-in-law and brothers-in-law, my lovely nieces and

nephews, and my caring late grandparents. Definitely, my gratitude goes to my wife, Clara. Your endless support, patience, and strength made this journey worth it not only for me, but more importantly for both us.

Finally, my gratitude goes to Almighty Allah, who I always believe pours His blessings on me and my family in the ways that I am most grateful to Him.

Dedication

If a bird flies with two wings, I 'fly' and 'land' with three wings.

This is for my wings, three strong wings, three strong women in my life:

My late grandmother, Kusdirah

My mother, Dwi Juliani

My wife, Clara

Table of Contents

| | |
|--|------|
| Abstract..... | ii |
| Declaration..... | iv |
| Acknowledgements..... | v |
| Dedication..... | viii |
| Table of Contents..... | ix |
| List of Tables..... | xii |
| Chapter 1..... | 1 |
| Introduction..... | 1 |
| 1.1 Statement of problem..... | 3 |
| 1.2 Structure of the thesis..... | 7 |
| Chapter 2..... | 9 |
| Disaster and disaster recovery..... | 9 |
| 2.1 Defining disaster..... | 9 |
| 2.2 Impacts of disasters..... | 16 |
| 2.3 Disaster recovery..... | 20 |
| 2.3.1 The term “recovery”..... | 20 |
| 2.3.2 Pathways to community recovery..... | 22 |
| Chapter 3..... | 28 |
| Community psychological aspects of disaster and disaster recovery..... | 28 |
| 3.1 Community..... | 28 |
| 3.2 Sense of community..... | 34 |
| 3.3 Place attachment..... | 44 |

| | |
|---|-----|
| 3.4 Place identity..... | 52 |
| 3.5 Social capital..... | 59 |
| 3.6 Culture | 68 |
| Chapter 4..... | 84 |
| Research Methodology | 84 |
| 4.1 Qualitative methodology..... | 84 |
| 4.2 Grounded Theory as a design framework..... | 87 |
| 4.3 Rationale for choosing constructivist grounded theory | 91 |
| 4.4 Participants..... | 92 |
| 4.5 Fieldwork..... | 93 |
| 4.6 Data collection and data analysis..... | 95 |
| 4.7 Ethical considerations | 98 |
| 4.8 Trustworthiness..... | 98 |
| 4.9 Researcher’s reflexivity | 100 |
| Chapter 5..... | 103 |
| Results..... | 103 |
| 5.1 Introduction to study context | 103 |
| 5.2 Themes..... | 112 |
| 5.2.1 Embracing the volcano for living one’s life | 113 |
| 5.2.2 Losing an integrated lived space, losing the meaning of place | 124 |
| 5.2.3 Benefits and disadvantages of aid..... | 137 |
| 5.2.4 Centring ‘gotong royong’ as a key to community recovery | 150 |
| Chapter 6..... | 158 |
| Discussion..... | 158 |

| | |
|---|-----|
| 6.1 Psychological studies into disaster and post-disaster | 158 |
| 6.2 On “embracing the volcano for living one’s life” | 160 |
| 6.3 On “losing an integrated lived space, losing the meaning of place” | 164 |
| 6.4 On “benefits and disadvantages of aid” | 174 |
| 6.5 On “centring gotong royong as a key for community recovery” | 180 |
| 6.6 Themes interconnected: A grounded theory of “the enduring role of culture in community recovery post-disaster” | 185 |
| 6.7 Implications for practice | 188 |
| 6.8 Limitations of the study | 191 |
| 6.9 Conclusion | 192 |
| References..... | 194 |
| Appendix 1: Ethics approval by Victoria University Human Research Ethics Committee..... | 233 |
| Appendix 2: Information to participants involved in research | 234 |
| Appendix 3: Information to participants involved in research (Indonesian version) | 236 |
| Appendix 4: Consent form for participants | 238 |
| Appendix 5: Consent form for participants (Indonesian version) | 240 |
| Appendix 6: Interview guide (community interviewee)..... | 242 |
| Appendix 7: Interview guide (government interviewee)..... | 244 |
| Appendix 8: Interview guide (Non-Governmental Organization interviewee).. | 246 |

List of Tables

| | |
|--|----|
| Table 1 Development of analytic themes | 97 |
|--|----|

Chapter 1

Introduction

Disasters are complex phenomena with a range of physical, psychological, social, cultural, political, and economic consequences for individuals and for communities.

Disasters' consequences can take many different forms. Displacement is a consequence of disaster that renders the amalgamation of myriad consequences.

Displacement points out physical destructions to both individuals' and communities' physical environments that give rise to physical injuries or deaths. It also stands for psychological problems, social disruptions, cultural changes, political bitterness – occasionally – and economic hardships.

Displacement caused by disasters can be temporary during evacuation and temporary shelter before returning to place of origin. It can also be permanent as when a community relocates permanently and are not able to return to place origin.

Displacement poses various consequences including financial difficulty, competition for resources, loss of trust and faith in government, poor health care, tension in relationships with others, and dissociation from community (Tuason, Güss, & Carroll, 2012). Relocation as is mostly intended may avoid or reduce the susceptibility of future disasters (Binder, Baker, & Barile, 2015). Yet, of multitude hardships experienced by disaster survivors post-disaster, relocation is an intrinsically negative event and among the most disruptive (SCRA, 2010).

Disasters cause the disruption of sense of community (Bonnano, Brewin, Kaniasty, & Greca, 2010; Kaniasty & Norris, 1995; Kaniasty & Norris, 2004) and overwhelm whole communities because 'sense of victimisation' is shared (Kaniasty &

Norris, 1995). Exchange of support is impeded because of injury or death, alteration of normal and routine activities, destruction of physical environments where social interactions occur, and other life-threatening situations. Consequently, relocation exposes relocated communities to more difficult consequences and experiences. Relocation poses a social network disruption that is associated with increased health and psychological issues (Uscher-Pines, 2009). Relocation requires communities to deal not only with physical and psychological issues at individual level such as distress, trauma, and Post-Traumatic Stress Disorder (PTSD), but also social-level issues of how to rebuild a sense of community and community functioning in a new location with new physical settings and infrastructure. Furthermore, relocation implies disruption in place attachment with physical change threatening to overwhelm pre-disaster stability (Brown & Perkins, 1992).

Relocation as a consequence of disaster repeatedly takes place in disaster-prone countries. It is often experienced in a country like Indonesia where almost 2.5 million were displaced by disasters in the period 2008-2012 (Yonetani & Morris, 2013). Indonesia is among the top 5 countries that are most frequently affected by disasters (Guha-Sapir, Hoyois, & Below, 2014). Indonesia is frequently affected by both hydro-meteorological disasters that include floods and landslides and geo-physical disasters that include tsunamis, earthquakes, and volcanic eruptions. In relation to geo-physical disasters, Indonesia sits in the intersection of three tectonic plates (the Pacific, Eurasian, and Australian plates), famously called the “ring of fire”, which makes Indonesia vulnerably prone to earthquakes and volcanic eruptions (Djalante, Thomalla, Sinapoy, & Carnegie, 2012).

Furthermore, Indonesia has more active volcanoes than any other country in the world. Among 139 active volcanoes in Indonesia, Merapi is Indonesia’s most active

volcano (Siebert, Simkin, & Kimberly, 2010) as its eruption typically recurs every 8-15 years (Thouret, Lavigne, Kelfoun, & Bronto, 2000). Merapi, coined as a killer volcano (Gertisser et al., 2011) and one of the most active and dangerous volcanoes in the world (Mei et al., 2013), erupted in 2010, which caused 367 people to be killed, while about 400,000 people were evacuated (Suroño et al., 2012), with estimated damages of US\$360 million (Bappenas-BNPB, 2011).

The 2010 eruption of Merapi was disastrous in many ways. Like any other disaster, the 2010 eruption of Merapi had negative consequences for human beings: physical (e.g., injury, death), psychological (e.g., distress, trauma), economic (e.g., loss of business), and social (e.g., community relocation). These consequences were intertwined with each other. Some individuals experienced them temporarily or short-term, some experienced them long-term. On top of that, as experience of disaster it was collectively experienced (McFarlane & Norris, 2006). Moreover, the eruption caused thousands of people to be permanently relocated as a result of the massive destruction by the eruption to their village of origin. Citing imminent risks, the government of Indonesia invoked the commandment for permanent relocation for communities assessed as inhabiting eruption-prone villages. As a result, the 2010 eruption left nearly 3,000 households permanently relocated (Bappenas-BNPB, 2011). The relocation forcibly resettled approximately 13,000 people who had been living on the slopes of Merapi since people originally rejected to be permanently relocated (see Nazaruddin, 2013).

1.1 Statement of problem

The present study places emphasis on permanent relocation as a consequence of disaster. This results in a myriad of significant consequences. In spite of its wide-

ranging consequences, the approach to studying post-disaster relocation remains frequently focused on physical aspects that include housing and infrastructure, economics, and health (see Hori & Schafer, 2010; Jordan & Javernick-Will, 2013). The present study underscored that permanent relocation confronts relocated communities with disruption to sense of community and, as a form of displacement, it leads to disconnection from place and change in the cultural life of relocated communities. Therefore, the present study focused on permanent relocation, sense of community, connection to place, and culture.

The present study examined the consequences of relocation for sense of community and connection to place on relocated communities and how an understanding of cultural contexts of sense of community and connection to place can facilitate post-disaster recovery following relocation as in the context of the 2010 eruption of Merapi.

In examining the extent to which permanent relocation has consequences for sense of community and connection to place, and how culture is important in understanding sense of community and connection to place in post-disaster relocation, the present study took into account that relocation in the aftermath of the 2010 eruption brought relocated communities to encounter new community processes in new physical setting. After being disrupted by the physical occurrence of disaster that led to relocation, a sense of community was redeveloped as part of the recovery process. The literature in community psychology on the concept of sense of community is extensive (see Bess, Fisher, Sonn, & Bishop, 2002; Brodsky, 2009). Yet, the concept of sense of community has not been examined thoroughly in its links to culture and specific context of relocated communities post-disaster, even though a few disaster studies (e.g., Huang & Wong, 2014; Li, Sun, & Chan, 2011) indicated

that individuals' sense of community is associated with both the positive psychological status (e.g., life satisfaction) and negative psychological status (e.g., depression, trauma, distress) of disaster survivors.

The present study took into consideration that relocation is disruptive to connection to place. In fact, relocation is a disruption to place attachment (Brown & Perkins, 1992). Relocation post-disaster is a collective phenomenon (Boen & Jigyasu, 2005) because it involves more than relocating individuals and changing physical settings. It involves a community as a whole. Relocation affects the connection of a whole community with a place where physical, social, historical, and cultural elements of a place are interrelated. Moreover, the present study recognised that there are still a few studies that investigate the role of place in the recovery process within the extensive literature on disaster recovery (Silver & Grek-Martin, 2015).

Furthermore, the present study took into consideration the reality that a disaster and subsequent relocation led to an emergent culture of disaster because of the pressing difficulty that arose out of disaster and relocation (Marsella, Johnson, Watson, & Gryczynski, 2008). Nevertheless, as Tuason et al. (2012) pointed out, relocation results not only in more vulnerability, but also the loss of a cultural community. This indicates that culture, as part of one's life, evolves in the new context of relocated communities. Within relocated communities, culture can be in terms of one from the pre-disaster context that is re-lived or one that is transforming in the new context. Culture that evolves for relocated communities functions as a general frame of reference to make sense of reality, coordinate actions in communal living, and adapt to a set of new challenges in external environments (Chiu & Hong, 2006). This suggests that community recovery from disaster is situated in a cultural context. In other words, community recovery post-disaster has a cultural dimension

(Oliver-Smith, 2011; Tierney & Oliver-Smith, 2012). Very few studies have investigated the cultural dimension to post-disaster community recovery (Nakagawa & Suwa, 2010) and it has only recently started to be seriously studied (Tierney & Oliver-Smith, 2012).

Above of all, the focus on culture as an important dimension of community recovery for relocated communities is to ascertain culture as both contextual and ecological factors that define community (Kral et al., 2011). Therefore, community recovery for relocated communities can be understood as well as catalysed through the understanding gained from community-level analysis and a community-specific perspective (Trickett, 2009).

Last but not least, the present study acknowledged that although an increasing amount of disaster studies have been conducted in developing countries, the numbers are modest in comparison to disaster studies in developed countries (Norris & Elrod, 2006; Norris, Friedman, & Watson, 2002; Roy, Thakkar, & Shah, 2011; Uscher-Pines, 2009). Recently, Roy et al. (2011) found that less than 1% of the citations in PubMed addressed disasters in developing countries compared to disasters in developed countries. Despite the fact that disasters occur more frequently and catastrophically in developing countries, much of the notion of recovery from disasters is based on developed countries' experiences. As a consequence, that may not be fully applicable or replicable outside the context of developed countries. This implies that post-disaster interventions in developing countries carried out by developed countries' aid agencies and humanitarian workers may carry ill-informed methods. The present study will contribute to the literature on disaster recovery in the context of developing countries that can be used to inform aid agencies how to implement post-disaster interventions that adopt sound community and cultural

perspectives. Thus, the present study will expand understanding within the academic realm as well as provide insightful information for application-for-intervention purposes.

1.2 Structure of the thesis

This thesis is divided into six chapters. After the introduction, Chapter 2 and Chapter 3 provide reviews of key literature relevant to the central concepts used in the thesis. Chapter 2 begins with the review on the conceptualisation of disaster that begins as early as 1920. The review looks at how the concept of disaster developed and evolved from disaster as a physical phenomenon to disaster as a social phenomenon. In relation to the review on the concept of disaster, the chapter continues by presenting a review on impacts of disaster that are wide-ranging. Finally, the chapter presents the review on the concept of disaster recovery. Chapter 3 presents community psychological dimensions that critically link with disaster and disaster recovery. The chapter begins with a review on the notion of community since the present study focuses on community-level recovery and the notion of community is foundational to the concept of sense of community. The review on the concept of sense of community provides both an overview of historical development and the theoretical contentions that followed the emergence of the concept as an overarching theme and major construct in community psychology. The chapter then continues by reviewing the concepts that closely relate to the concepts of sense of community and connection to place: place attachment, place identity, and social capital. The literature review ends by presenting a critical review on the concept of culture as to how different disciplines, namely anthropology, sociology, and psychology (including community psychology) define it.

Chapter 4 describes the methodology of the research that is the focus of this thesis. This chapter begins with a description of qualitative methodology and the chosen design framework of grounded theory. The chapter continues by presenting the rationale of choosing a specific approach of constructivist grounded theory. Then, the chapter presents a description of the fieldwork component of the present study followed by the data analysis component. This chapter also presents the issue of trustworthiness as the present study employs qualitative methodology. This chapter ends by presenting the researcher's reflexivity statement as a measure for ensuring the rigor and quality of the chosen methodology.

Chapter 5 presents results of the present study. This chapter begins by presenting an introduction to the study context to provide background information. This background information is provided so that the results of the study can be clearly situated in their sociocultural context. The results present four themes derived as a result of employing constructivist grounded theory methodology.

Chapter 6 discusses the results of the study and presents implications for future practice. This chapter also discusses the limitations of the present study. The chapter ends by presenting the conclusions.

Chapter 2

Disaster and disaster recovery

This chapter aims to present a review on the concept of disaster and disaster recovery. The chapter begins with a review on the definition of disaster by relating it to previous studies into disaster in social sciences. The chapter looks at the social scientific conception of disaster that is explored in the field of disaster studies (Lindell, 2013; Quarantelli, 1994) or disaster research (Peek & Mileti, 2002; Tierney, 2007). The chapter also provides a review on various impacts of disaster. The chapter ends with a review of literature on disaster recovery.

2.1 Defining disaster

Disaster has become a field of research in social sciences since Prince (1920) study on the Halifax harbour explosion (Peek & Mileti, 2002; Perry, 2007). In the decade afterwards, Carr (1932) laid out a foundation for the field as he argued that disasters can be distinguished not only on the basis of consequences that involve loss of life and personal injury, but also on the basis of the character of the precipitating event. Carr (1932) asserted that disaster is constituted by the collapse of cultural protections. Moreover, there is a sequence-pattern in disaster in which it indicates a prevailing sequence of social change. According to Carr (1932) the actual onset of the catastrophic forces – such as natural phenomena of earthquakes or volcanic eruptions – do not always result in deaths, injuries, and losses. Deaths, injuries, losses and damages are essentially consequences of the disaster, not the disaster itself. Consequences of the disaster are, after all, resultant from the collapse of cultural protection.

Disaster research started to proliferate in the 1950s (Peek & Mileti, 2002; Quarantelli, 2005) and up to this period, disaster was only implicitly or partially defined (Perry, 2007). Moving away from what Carr had conceived, in the 1950s, disasters were mostly defined (e.g., Killian, 1954; Moore, 1958; Wallace, 1956) by focusing on their negative consequences and their impacts on social order that require adaptation by the affected society (Perry, 2007). Fritz (1961) proposed a definition considered as the first formal definition of disaster, since it attempted to be more precise and detailed. Fritz (1961) defined disaster as:

An event, concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses to its member and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented. (p. 655)

Fritz's definition basically affirmed disaster as an event that disrupts critical functions of society. This definition considers that disasters encompass large-scale social systems and matters of biological survival (e.g., subsistence, shelter, and health), order (e.g., division of labour, authority pattern, cultural norms, and social roles), meaning (e.g., values, a shared definition of reality, and communication mechanisms), and motivation within the systems. Fritz's definition is similar to those who view disasters as agent-caused events that induce serious negative consequences for a society (Perry, 2007).

Furthermore, Fritz (1961) pointed out that disasters vary in many ways. Disasters can be characterised by their predictability, probability, and controllability; the nature of the precipitating agent (e.g., flood, earthquake, volcanic eruption); the origin

(natural, human-made); the speed of onset (instantaneous, progressive); the scope (focalised, diffused); and the destructive effects on people and physical objects.

Sjoberg (1962) defined disaster as a severe, relatively sudden, and frequently unexpected disruption of a social system as a result of a triggering event that goes beyond societal control. This definition places emphasis on the triggering event that is sudden, uncontrollable, and external to society. The notion of disasters as a category of events (Perry, 2007) was also put forward by Kreps (1998) who defined disasters as non-routine events in societies or their larger subsystems that involve social disruption and physical harm. By this definition, Kreps emphasises and distinguishes disasters as unusual and dramatic happenings that differ from everyday events. A similar definition was proposed by Porfiriev (1998), who put forward a disaster as an event that destabilises the social system. Within the notions of disasters as events it is explicitly conveyed that disasters are events of disruption of social order and routines. This implicitly suggests a cycle of normality and stability–disruption–adjustment that characterises disasters (Perry, 2007).

After Fritz proposed the first formal definition of disasters, Barton (1969) proposed a definition that emphasises what happens to a social system in the situation called a disaster. Barton defined disasters as collective stress situations that occur when many members of a social system fail to receive expected conditions of life from the system. Barton argued that collective stress stems from sources either inside or outside the social system. The sources from inside the social system include a variety of forms of massive social disorganisation, and economic and political breakdowns. The sources from outside the social system comprise large unfavourable changes in the system environment, which originate from occurrences such as floods, droughts, earthquakes, et cetera.

Barton's (1969) definition emphasised the expected conditions of life that go on; that is, normal activities. In addition, Barton asserted that the breakdown in expected conditions of life emerges not only from a deteriorating of conditions, but also from an unforeseen surge of expectations at the time the system fails to fulfill it. So, disasters occur when a social system is unable to deal with a deteriorating of conditions and an unforeseen surge of expectations triggered by large unfavourable changes in the system environment. Moreover, Barton put forward a classification that stems from four basic dimensions of collective stress situations: namely scope of impact (geographical, number of people); speed of onset (sudden, gradual, chronic); duration of impact (short or long); and social preparedness (low or high). This classification provides further emphasis on social dimensions of disaster events, not the events themselves (Perry, 2007).

Barton is one of the proponents that conceive disaster as a social phenomenon (Perry, 2007). A number of definitions that adhere to this school of thought are proposed by prominent scholars in disaster studies: among many others, Quarantelli (1985), Dombrowsky (1998), Britton (1986), Dynes (1998), and Oliver-Smith (1999). Within the tradition of conceptualising disasters as a social phenomenon, these scholars focus on social phenomena as the essential characteristic of disasters and emphasise vulnerability as being socially constructed, as well as the idea of social change (Perry, 2007; Quarantelli, 1978). This tradition sees disasters as always involving physical energy unleashed by a phenomenon *and* the human reaction (Alexander, 1997). A disaster is primarily caused by the social conditions that such physical energy impacts on, rather than by the physical phenomena that precipitates it (Quarantelli, 1978). Therefore, the disaster itself is social.

Quarantelli (1985, 1987; 1998) consistently advocated the need for clarification in conceptualisation of disaster. He pointed out this conceptual clarification is important both for social science purposes, especially for research use, and for empirical comprehension. To achieve it, therefore, antecedent conditions, subsequent consequences, and characteristics of a disaster should be clearly distinguished. Central in Quarantelli's (2005) argument is that disasters are rooted in the social structure or system and constituted by societal vulnerabilities. This suggests that vulnerability is socially constructed. He reiterated Carr's (1932) assertion that disasters represent social change. Not only are disasters consequences of social change, but also indications of ongoing social processes (Albala-Bertrand, 1993). Thus, the effects of disasters are not only defined with regard to casualties and losses, but more importantly the alteration of the pre-disaster structure and dynamics of the social system (Quarantelli, 2005).

Dombrowsky (1998) began to conceptualise disasters by pointing out the misuse of the term, such as in the common expression that "disaster strikes". In such an expression, disasters are mostly seen as a static actor or a "thing" that works to bring about effects. Instead, as he argued, what we call a disaster is essentially the effects of disaster. Therefore, it is a misconception that the effects precede what occurs afterwards. According to Dombrowsky (1998) disasters represent a dynamic complexity of interaction between humans and their material culture on the one side, and the auto-dynamic and self-organising processes of nature on the other side. Disasters occur as protection measures fail, inflicted by the inadequacy of means to prevent them (Dombrowsky, 1998). Such inadequacy, similar to what was argued by Carr (1932), reflects the state of cultural protection captured in habits, folkways, laws, and policies.

Britton (1986), from a point of view of emergency management practice, similarly argued that disasters stem from the vulnerability of a social system. Disaster, therefore, is a social product. Vulnerability of a social system is dependent upon cultural, social, and psychological factors characteristic of a population. Such factors combine to constitute social preconditions. Britton (1986, 2005) pointed out the importance of organisational arrangements to work on the social preconditions that form the vulnerability to disaster.

Oliver-Smith (1999) called for a definition of disaster derived from an ecological perspective. Disasters are not merely rooted in societies. Disaster do not simply emanate from vulnerabilities that are located in society. Rather, disasters are rooted in the societal-environmental relations. The relations are between two mutually constitutive entities. The relations, found in the human use of the physical environment, are adaptational. Such relations are processual phenomena that unfold over time. In the course of the relations, human beings attend to two basic aspects of their environment; as resources to fulfil their needs and as a set of challenges to adjust for their survival. When a disaster occurs it is “symptomatic of the condition of a society’s total adaptational strategy within its social, economic, modified, and built environments” (Oliver-Smith, 1999, p. 25).

Dynes (1998) put forward a spatial dimension of disaster definition. He pointed out disaster as a social disruption occurs in a social system context. Nonetheless, the meaning of social system context can be quite vague. Therefore, it is important that disaster definition specifies it. Disaster occurs as its effect brings social disruption that requires a great deal of effort on the part of community members. It is community members that make an effort to organise action and adaptation against the social disruption prompted by a disaster. As Dynes (1998) posited it, community is a

universal entity of social life and response that both affects and responds to social disruption caused by a disaster. Community is a social unit that has the capacity and resources to give rise to a response to the disaster. Community has a system of social activities and is where social action takes place in response to challenges and consequences of disaster. In addition, a community has a spatial dimension where terrain and climate are integral parts of it and quite often they influence proneness to disasters. Moreover, when studied in disaster research, community has cross-national and cross-cultural applicability (Dynes, 1998).

Disaster definitions vary across time and disciplines, and a consensus appears to be difficult to reach (see Alexander, 2005; Perry, 2007). Much of the difficulty in reaching consensus in defining disaster arises because its definition is contingent on shifting depictions and perceptions of what appears to be significant about the phenomenon (Alexander, 2005). Disasters tend to be more difficult to define than to recognise (Britton, 1986), albeit there are common themes in the heterogeneity of the definitions. Many definitions do recognise a physical force or event, but most of the definitions point to disruptions that occur to society's life that stem not merely from the physical agent, but more importantly from the state and the process within the society.

Differences or dissimilarities in defining disasters are inescapable. Nevertheless, conceiving a definition is of importance on a practical level to guide a study, including to interpret the findings of the study (Perry, 2007). In this regard, as ecological context is crucial to understanding in the present study, disaster is viewed as a phenomenon that occurs within the societal-environmental relations of a community that brings an effect of social disruption, which forces the community to take social action.

2.2 Impacts of disasters

Following Dynes's argument (1998), a disaster is rooted in a social unit of community, therefore, it is inevitable to assess impacts of disasters at the community level (Lindell & Prater, 2003) and as collective experience (McFarlane & Norris, 2006). According to Lindell and Prater (2003) the impact of a disaster is characterised by the speed of onset, intensity, scope, duration of impact, and probability of occurrence. The speed of onset impacts on the amount of warning a community receives, which subsequently influences the extent of casualties and the degree of destruction. The intensity involves the physical materials and the energy that these materials can impact on in the occurrence of a disaster. The scope determines the size of the social unit that is affected. The duration defines whether an occurrence of a disaster poses short-term or long-term impact to affected communities. The probability of occurrence impacts on how likely communities are to encourage themselves to become involve in mitigation and preparedness for future disaster.

The impacts of disasters are varied. Lindell and Prater (2003) distinguished impacts of disasters into two broad categories: physical and social. The physical impacts of disasters include casualties (deaths and injuries) and property damage. The social impacts include sociodemographic, economic, political, and psychosocial impacts. Lindell and Prater (2003) subsumed a range of psycho-physiological and psychological outcomes under social impact as they argued that communities experience impacts of disasters as *a population*, not only as aggregated individuals. Nonetheless, many argue that psychosocial or mental health impacts of disasters are evident (e.g. Bonnano et al., 2010; Green, 1991; Norris, Friedman, & Watson, 2002; Norris, Friedman, Watson, et al., 2002) and thus form a distinctive category of

impacts of disasters, albeit psychosocial or mental health conveys the impression of an individual.

The physical impacts of disasters encompass human casualties as a result of direct and indirect consequences of disaster occurrence. Casualties can be a result of, for instance in the case of tsunami, people who are taken by the wave. In addition, casualties can be a result of the breakdown of infrastructure, for instance a damaged nuclear power plant – as it is hit by the wave – that results in serious illnesses from contaminated water supplies. The physical impacts of disasters comprise not only property damage and loss of structures, animals, and crops, but also natural environment damage that includes damage to cropland, rangeland, and woodland (Lindell & Prater, 2003).

The social impacts of disasters are very broad and can develop over a long period of time. One type of social impact is sociodemographic; this arises from the destruction of households' residences (Lindell & Prater, 2003). As a result, households are relocated, from emergency and temporary shelter to permanent housing. Relocation is among the most disruptive difficult experiences for disaster survivors (Viola, 2010) as it can exacerbate the immediate losses caused by disasters. Relocation is stressful (Carlisle-Frank, 1992), resulting in more vulnerability and the loss of cultural community (Tuason et al., 2012), and can threaten identity and sense of control (Uscher-Pines, 2009). In addition, it poses higher social costs as those relocated are more likely to be unemployed and less likely to maintain quality of life in the aftermath of a disaster (Hori & Schafer, 2010). Riad and Norris (1996) found that relocation was associated with higher levels of ecological stress, crowding, isolation, and social disruption. Furthermore, another study by Najarian, Goenjian, Pelcovitz, Mandel, and Najarian (2001) found that relocation was associated with

increased risk of depression. Relocation possibly exacerbates the effect of stressors that prevail in the aftermath of disasters (Riad & Norris, 1996) that result in a slower process of recovery (Norris, Friedman, Watson, et al., 2002). Kiliç et al. (2006) and Uscher-Pines (2009) argued that social network disruption or change is unique to the relocation experience and is associated with increased health and psychological morbidity.

The economic impacts of disasters are constituted by the property damage that causes a loss in asset value. Some assets can be irreplaceable and some others are replaceable (Lindell & Prater, 2003). In the case of irreplaceable assets, the losses can create a reduction in consumption and investment, thus, leading to downsized economic productivity. In addition, the economic impacts stem from disruption of the interdependence of community sub-units in the form of business activities. These activities involve a constant flow and exchange of resources, materials, services, etc. The disruption causes a breakdown in production and services and incurs more costs, both actual and opportunity costs. Guha-Sapir et al. (2014) uncomplicatedly pointed out that the economic impact comprises direct consequences on the local economy (e.g., damage to infrastructure, crops, housing) and indirect consequences (e.g., loss of revenues, unemployment).

Lindell and Prater (2003) noted the political impact of disasters in relation to social activism that may arise in the aftermath of a disaster. As disaster survivors experience grievances, community conflict is likely to occur. It usually arises from housing issues (Lindell & Prater, 2003) with regard to dissatisfaction about availability, site characteristics, building characteristics, and conditions of allocation. These issues can create conflict among survivors themselves, with host or neighbouring communities, or with government – local and national. Survivors may

organise collective action with an explicit disaster-related political agenda.

Nevertheless, political impact of disasters can also occur in relation to politics in general. In this regard, Guggenheim (2014) argued that disasters produce politics. He saw that disasters as prime empirical sites to understand about politics because disasters are chaotic times when norms fail. The 2004 Indian Ocean tsunami is an example of how the disaster had an impact on politics (Waizenegger & Hyndman, 2010; Zeccola, 2011). The 2004 Indian Ocean tsunami created peace in Aceh, Indonesia after almost three decades of conflict; while the same impact did not happen in Sri Lanka (Klitzsch, 2014).

The psychosocial impact of disasters has been studied exhaustively (Bonnano et al., 2010; Fergusson & Boden, 2014; Leon, 2004; Norris & Elrod, 2006). The studies show that disasters cause a wide range of negative psychosocial outcomes, which can develop in the short- and long-term. The psychosocial impacts of disasters include Post-Traumatic Stress Disorder (PTSD), depression, anxiety disorders, traumatic grief, psychosomatic symptoms, substance abuse, and chronic problems in living related to interpersonal, familial, financial, and ecological changes and stress (Bonnano et al., 2010; Norris & Elrod, 2006). Some of these outcomes can be intense and of long duration (Leon, 2004) and, therefore, pose more serious problems. A current overview of the psychosocial impact of disasters (Fergusson & Boden, 2014) highlighted that Post-Traumatic Stress Disorder (PTSD), anxiety disorders, depression, and substance abuse impact only to a relatively small group of people.

The psychosocial impacts of disasters are not only related to clinical symptoms, but also changes in risk perception (beliefs in the likelihood of the occurrence of a disaster and its personal consequences for the individual) and increased hazard intrusiveness that includes frequency of thought, discussion, and information receipt

about a hazard (Lindell & Prater, 2003). These changes, in turn, have impact on communities' vulnerabilities to future disasters.

2.3 Disaster recovery

The section on disaster recovery consists of two subsections: consideration of the term “recovery” and a discussion of pathways to community recovery. The subsection on the term “recovery” provides a review on how existing literature elucidates the meaning of the term. The subsection on pathways to community provides a review on different ways that can lead to community recovery or influence the process of community recovery.

2.3.1 The term “recovery”

The term “recovery” is widely used and referred to in disaster studies (e.g. Berke, Kartez, & Wenger, 1993; Hales, Walzer, & Calvin, 2012; Nigg, 1995; Olshansky & Chang, 2009; Quarantelli, 1999; Rubin, 1985) and in relation to the disaster management cycle (e.g., Cronstedt, 2002; EMA, 2004; Janssen, Lee, Bharosa, & Cresswell, 2010; O'Brien, O'Keefe, Gadema, & Swords, 2010; Phillips, 2011; Phillips, Neal, & Webb, 2012). The practice of disaster management generally describes a cycle of phases of response, recovery, mitigation, and preparedness (O'Brien et al., 2010). However, as noted by Quarantelli (1999), the use of the term “recovery” is not very clear because, from time to time, it is used interchangeably with other terms such as reconstruction, rehabilitation, and restoration by both researchers and disaster management practitioners. Its indicators in publications in some disaster-focused journals appear to be segmented and fuzzy (Jordan & Javernick-Will, 2013). That means recovery, as one part of the cycle in disaster

management, remains lacking in a body of theory to guide both researchers and disaster management practitioners (Berke et al., 1993; Olshansky, Hopkins, & Johnson, 2012; Smith & Wenger, 2007).

Practically, in connection with disaster relief efforts, the term “recovery” is usually used to depict activities in the immediate aftermath of disasters by which humanitarian workers or volunteers rescue those who survive and search those who do not survive (Alesch, 2005). In the bigger picture of disaster management, the term “recovery” refers to attempts to bring back conditions as they were before the occurrence of the disaster. This differs from how studies conceive what disaster recovery is.

Quarantelli (1999) pointed out that recovery covers a wide range of very complex activities. Pointing to other terms that are frequently used –reconstruction, rehabilitation, restoration, and restitution – he put forward the idea that what a process is called can bring an important difference in outcomes. By saying this, he underlined the importance of recovery as a process, rather than as an outcome. Moreover, he signified the policy implications of what might constitute success or failure in the process of recovery.

As a process, recovery encompasses a series of stages, steps, and sequences by which people, communities, and organisations move forward into a post-disaster condition (Phillips, 2011; Winkworth, 2007). It is in the dynamic of process that different factors play an important role in recovery. Furthermore, in this way, different researchers with different background of disciplines have their own focus and findings that resonate with arguments from Alesch (2005) and Olshansky et al. (2012) about the infancy of the study of disaster recovery. Many disaster researchers take the position in relation to the conceptualisation of recovery that there is an end point,

whether it is a return to the pre-disaster level of functioning (Winkworth, 2007), a return to normalcy (Smith & Wenger, 2007), the attainment of system equilibrium (Hales et al., 2012), or an adaptation to the attainment of a higher level of functioning (Onstad et al., 2012; Shaw, Gupta, & Sarma, 2003). Taken together, this implies recovery as an outcome that depicts a fundamental difference: between a return to normalcy of a pre-disaster level of functioning or the achievement of a higher level of functioning and an increased capacity to deal with future disasters (Winkworth, 2007).

2.3.2 Pathways to community recovery

Disaster recovery can take weeks, months, and even years. It encompasses a multitude of aspects following various impacts that a disaster can inflict. Even though the recovery process is a long-standing interest of disaster researchers (Beggs, Haines, & Hurlbert, 1996), the study of disaster recovery is still in its infancy (Alesch, 2005; Olshansky et al., 2012). Factors affecting disaster recovery have been known, such as the scale of the disaster occurrence, the scope of the damage, and prior-to-disaster conditions (Stehr, 2001), but a comprehensive theory of recovery has yet to be developed (Smith & Wenger, 2007). While literature on disaster recovery is growing (Alesch, 2005), the lack of a systematic comparative emphasis and a negligence to contextualise recovery within diverse settings has created a constraint in developing a comprehensive theory of recovery (Tierney & Oliver-Smith, 2012).

Disaster recovery has been studied from a variety of disciplines (Jordan & Javernick-Will, 2013; Smith & Wenger, 2007) including sociology (Nigg, 1995), politics (Stehr, 2001), engineering (Miles & Chang, 2006), urban planning (Chang, 2010), geography (Pais & Elliott, 2008), economy (Handmer & Hillman, 2004), and psychology (Hutchins & Norris, 1989; Kaniasty & Norris, 1995). This shows the

interdisciplinary nature of studying recovery. However, as Jordan and Javernick-Will (2013) pointed out, there is a tendency in disaster recovery studies that different disciplines put emphasis on different indicators of recovery.

Early studies on recovery, which are mostly based on disasters in the United States (e. g. Haas, Kates, & Bowden, 1977; Quarantelli, 1982) argued that recovery is predictable with its goal of returning to normalcy. However, this was overly simplified (Jordan & Javernick-Will, 2013; Smith & Wenger, 2007) because disaster recovery is not uniform across communities (Berke et al., 1993; Bolin & Bolton, 1986) and is unique to location, time, and context (Olshansky, 2005). Moreover, disaster recovery is dynamic and nonlinear (Jordan & Javernick-Will, 2013), even messy and uncertain (Smith & Wenger, 2007).

Many studies claim the importance of housing recovery and the reestablishment of the physical and built environment in recovery (e. g. Bolin, 1976; Bolin & Stanford, 1991; Comerio, 2014; Gould, 2009; Peacock, Dash, & Zhang, 2007). Underpinning this claim is the argument that recovery can be captured through the degree that the built environment such as houses, roads, and critical infrastructures are restored (Abramson, Stehling-Ariza, Park, Walsh, & Culp, 2010). Housing, especially, is a fundamental and core element of recovery because it is an essential element of daily life (Bolin & Stanford, 1991; Comerio, 2014). In addition, housing recovery is essential because, as argued by Gould (2009), it carries an imperative legal framework of the right to housing. Disasters create further exacerbation to vulnerability in communities and those who are most vulnerable become most affected by disasters. Hence, housing recovery is substantially promoting justice (Gould, 2009).

Gould's (2009) point of view on how housing is critical for vulnerable members of the community is not new. Almost three decades ago, Bolin and Bolton (1986) conducted a study that provided a basis for these ideas. They found that recovery was linked with race and ethnicity, which are associated with social classes and pattern of inequities in communities (Bolin & Bolton, 1986). As there was quite a distinctive pattern of social stratification that went along race and ethnicity lines, they found those who were poor and of lower socioeconomic status became more vulnerable and did not recover as quickly as those of higher socioeconomic status.

Different studies point out recovery as process and the complexity of the recovery process require different aspects to be factored in (e.g., Johnston, Becker, & Paton, 2012; Jordan, Javernick-Will, & Amadei, 2014; Mitchell, Esnard, & Sapat, 2012; Nigg, 1995; Olshansky, 2005; Olshansky et al., 2012). For example, Nigg (1995) pointed out recovery as a social process encompasses a whole range of decision-making processes, thus, it requires such processes be adequate. Johnston et al. (2012) posited recovery requires effective social organisation, mobilisation, and coordination to manage different assistance from different resources. Similarly, Mitchell et al. (2012) pointed out the necessity for integration of agency programming at various levels and the need for policies to integrate short and long-term objectives of recovery. Jordan et al. (2014) stated that in addition to low social vulnerability, participation and social capital are causal condition for recovery. Olshansky et al. (2012) pointed out recovery as a time compression phenomenon in which recovery activities are carried out in a bounded space as well as time, therefore, all recovery planning and institutional design following a disaster need to account for time limit in recovery process.

Ever since disaster recovery became a research subject within social sciences, a range of factors have been pinpointed as indicators or determinants (Dwyer & Horney, 2014; Jordan & Javernick-Will, 2013; Moore et al., 2004). Those factors are sense of place (Chamlee-Wright & Storr, 2009; Cox & Perry, 2011; Prewitt Diaz, 2013), personal networks (Beggs et al., 1996), social support (Kaniasty, 2012; Kaniasty & Norris, 1995), local organisational capacity (Berke et al., 1993; Garnett & Moore, 2010), local empowerment and leadership (Garnett & Moore, 2010; Shaw et al., 2003), government, intergovernmental, and non-governmental agencies (Calvin, 2012; Hales et al., 2012), community participation (Chandrasekhar, 2012; Picou, 2009; Shaw et al., 2003), and social capital (Aldrich & Meyer, 2015; Chamlee-Wright & Storr, 2011; Cox & Perry, 2011).

In the absence of integration of recovery theories, Tierney and Oliver-Smith (2012) attempted to summarise the social dimensions of recovery that include (1) pre-disaster factors that constitute communities' vulnerabilities; (2) disaster impacts and their implications for recovery; (3) immediate post-impact responses; and (4) post-disaster variables (e.g., governance, institutional capacity, civil society-state relationships, aid). In addition, Jordan and Javernick-Will (2013) put forward a set of indicators for measuring recovery that comprise economic, environment, infrastructure, and social indicators. Nevertheless, Jordan and Javernick-Will's (2013) *social indicators* – which comprise mental health, population return, perceived quality of life, and social service availability – appear to overlook what has drawn the attention of social researchers of recovery over the last few years, which is the significance of social capital (Aldrich, 2015; Aldrich & Meyer, 2015).

Studies that link social capital and recovery have been growing, and come out of the typical approaches that focus on damage, governance, socioeconomic status, and

aid (Aldrich, 2015). Many studies remain centred on physical infrastructure-focused approaches and, furthermore, in the field of practice, social capital is still yet to be fully embraced as a key component by disaster management practitioners (Aldrich & Meyer, 2015). Beside Aldrich's studies, there have been other studies providing evidence that social capital can facilitate recovery (e.g. Chamlee-Wright & Storr, 2011; Cox & Perry, 2011; Dynes, 2002; Masten & Obradovic, 2008; Moore et al., 2004; Nakagawa & Shaw, 2004; Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008). Interestingly, social capital appears to bridge the housing approach and the social approach of recovery (Mukherji, 2014).

Central in the significance of social capital for facilitating recovery is that networks of relationships embedded in a social structure are used as a resource and actualised to engage a community in collective action to access various resources – including aid and information – in post-disaster situations (Aldrich, 2015; Rahill, Ganapati, Clérismé, & Mukherji, 2014). In addition, social capital in the form of collective narratives can facilitate recovery by shaping the way community members adopt strategies that focused on self-reliance (Chamlee-Wright & Storr, 2011).

Despite its growing popularity in the recovery studies, there have been calls to critically examine social capital as contextual (Mukherji, 2014; Rahill et al., 2014). Disaster occurs in a social system context. Disaster occurs in the community as a social unit (Dynes, 1998). Community is an important frame for recovery (Norris, 2012) because every community has its own narratives and symbols that give meanings for making sense of events as the basis of their response to disaster. The capacity of a community to respond emanates from not only community's social capital, but also the community's cultural capital (Stofferahn, 2012). Therefore, understanding social capital as contextual in the recovery process requires an

understanding of the community's culture. The need for understanding culture lies substantially in the notion that disasters affect culture (Deeny & McFetridge, 2005) by affecting the cultural lives of survivors (Hoffman, 1999b), causing the loss of access to places of cultural and social significance (Prewitt Diaz, 2013), and threatening the loss of personal and community identity, cohesion, and cultural heritage (Tierney & Oliver-Smith, 2012).

Despite the fact the literature of disaster recovery is growing, there are few research studies into a cultural approach to disaster recovery (Nakagawa & Suwa, 2010). Tierney and Oliver-Smith (2012) affirmed that the significance of culture as a factor of recovery has been long neglected. The cultural dimension of recovery has only recently started to be seriously studied. In the light of current literature of disaster recovery that remains lacking in a cultural dimension, the present study put emphasis on cultural aspects of the recovery process.

Chapter 3

Community psychological aspects of disaster and disaster recovery

This chapter presents a review on key concepts that are relevant to a social notion of disaster and the social dimensions of disaster recovery that the present study focuses on. The present study focuses in particular on sense of community, connection to place, and culture. Key concepts discussed in this chapter include: community, sense of community, place attachment, place identity, social capital, and culture.

3.1 Community

Community is a social unit that is pivotal to be studied in relations to disaster and recovery (Dynes, 1998; Norris, 2012). Disasters affect whole communities, but also well-conceptualised community is key for understanding disaster impact and recovery, as argued by Norris (2012). Furthermore, presenting community to understand disasters is critical for public policy. Hence, defining community is greatly important.

Community is a social phenomenon, and it has been in the interest of social sciences to conceptualise it (Delanty, 2010; Howarth, 2001). Although the concept of community, academically, has its origins in sociology, the quest to define community has been also in the interest of many disciplines: psychology, politics, anthropology, history, community development, media studies, and cultural studies (Bradshaw, 2008; Howarth, 2001). As a result, there have been debates and that makes community a contested concept, even within one single discipline. For example, an

early study that analysed the variation of community definitions (Hillery, 1955) found that out of 94 definitions in sociology alone, 16 different concepts were abstracted. Despite the fact that there was not complete agreement on the nature of community, Hillery's study contributes by identifying a basic agreement that community comprises persons in social interactions within a geographic area who have one or more additional common ties.

The concept of community began to be examined in the early 1900s, while the contestation of the concept of community emerged as Tönnies' (1957) concept of *Gemeinschaft* and *Gessellschaft* entered into the realm of sociological theories. Tönnies's concept has been recognised as influentially contributing to the conception of community not only within sociology, but also within social sciences more broadly (Wise, 2015). Tönnies' original concept had actually been published in German in 1887, but it had come into the discourse and been appraised as a seminal work after being translated into English in 1957. Tönnies (1957) in essence asserted two types of social organisation with contrasted attributes: common ways of life and beliefs, frequent interaction, concentrated ties, small numbers of people, distance from centres of power, familiarity, continuity, and emotional bonds (*Gemeinschaft*); in contrast to dissimilar ways of life and beliefs, infrequent interaction, dispersed ties, large numbers of people, proximity to centres of power, rules to overcome distrust, a temporary arrangement, and regulated competition (*Gessellschaft*). In its simple idealisation, *Gemeinschaft* presents the village life with kinship links; while *Gessellschaft* presents more of an urban way of life. Tönnies viewed a community as the product of social interactions formed by a social system within a bounded location.

Tönnies's distinction and characterisation of *Gemeinschaft* and *Gessellschaft* was followed by Hillery (1963), who proposed village and city types of community.

Unlike Tönnies, who emphasised motives for interaction that contrast and differentiate *Gemeinschaft* and *Gessellschaft*, Hillery emphasised components and subcomponents of interaction, space, activities, sentiment, and government that differ between village and city. Despite noting that boundaries in village and city are vague, Hillery, like Tönnies, pointed to the localised nature of village and city.

The notion of community as locality, however, poses definitional problems (Fairbrother et al., 2013) and reflects the older model of community (Bess et al., 2002). As claimed by Stacey (1969) the emphasis on geographical boundaries might lead to confusion since community can be as small as a local area and as large as a nation-state. Further, Stacey (1969) highlighted the necessity of a local social system for a locality to become a community. A local social system is a set of inter-related social institutions that are in existence in a geographically defined locality (Stacey, 1969) and which are built from minimum conditions such as: the majority of the local population should have been present together in the locality for some period of time; and, the longer is this period the more likely is there to be a local social system. For Stacey, community is not a locality per se, but it requires a social system that makes it a community.

Citing that groups of people who share common interests and interaction but not a common geographical locality may form a community, Bradshaw (2008) called the approach of defining community beyond a locality as post-place community.

According to Bradshaw (2008) what forms a community is social relations between people that are bonded by solidarity, not merely by being in a location as posited by Tönnies. Furthermore, Bradshaw argued that network analysis is vital to understand

social relations. Through network analysis the ties, which represent solidarity between people, can be known whether they are strong or weak. Hence, community is defined from its solidarity scale (from low to high in solidarity), rather than its physical boundaries as in the place-based model of community.

The post-place community approach is, nonetheless, varied. Cohen (1985) maintained the idea that a boundary, beside relations, defines community. However, he stressed the symbolic aspect of boundary as an element that embodies a sense of discrimination. In Cohen's view, the boundary captures the identity of the community and functions as a marker in the manner that may be physical and visible (e.g., gate, river) as well as not objectively apparent (e.g., language, religion). For Cohen, community is a symbolic notion because of its boundary, by which people give meanings to it, which can be derived from the experience of community (Vaisey, 2007).

Cohen's (1985) conception of community highlights a particular commonality – sharing of symbols – as an important feature of community. Another conception of community that focuses on commonality is argued by Anderson (1983). Unlike Cohen, Anderson argued that community is an imagined phenomenon by asserting that community is to be distinguished by the way in which it is imagined. Moreover, the basis for this imagination is a shared sense of connection and sense of belonging (Fairbrother et al., 2013).

Howarth (2001) put forward a social psychology of community that is similar to Anderson's (1983) conception of imagined community. Following the propositions of social representation theory (Moscovici, 1988), Howarth (2001) proposed a main argument that community is socially constructed through the negotiation of social representations of ourselves, of those close to us, of those unfamiliar to us. In this

notion, community becomes the site of striving in negotiating identity, belonging, and difference. In other words, the emergence of community requires others to make it exist.

Post-place theoretical positions posited above represent a newer conception of community, which is relational (Bess et al., 2002). That is, community is defined by relations that people have with others. This means that commonality – not locality – is key. Moreover, as people may share commonality across different aspects of life (e.g., language, religion, hobby, interest), it is not surprising that people may belong to more than one community.

Nevertheless, the geographical and relational notion of community is not the end of the discourse. The argument for a third position was put forward by Newbrough (1995). Newbrough posited it as a constructivist proposal. He argued for the idea of just community. Just community is community that improves human relationships by which people are treated in dignity and respect. Community needs to be assessed on its capacity to function as a competent community as to how it can function as a human system. As a third position, just community aims to resolve the contradiction between collectivity – as the first position – and individuality – as the second position (Newbrough, 1995). In a similar manner but with a different direction, Brint (2001) revisited the notion of *gemeinschaft* not only to resolve disagreements between classical liberalism and communitarians, but also to answer modern age issues of mass transportation and communication, geographic and social mobility, and cross-cutting social worlds. Brint argued that community relations needed not be exclusive or so frequent; instead, they need to be relations of affect, loyalty, shared values, and personal involvement with the lives of others.

As a newer theorisation, Newbrough's third position is, however, rather too metaphorical, although being claimed as a liberating notion. One of the most recent conceptions of community is offered by the social network perspective (Gilchrist, 2009; Neal & Christens, 2014). The social network perspective on the conception of community stresses the links and communication between individuals, and to a lesser extent, the connections between individuals and social institutions (Gilchrist, 2009). From the social network perspective, a community is a complex web of social connections.

Furthermore, applying the network perspective to the theorisation of community is constructive for community psychology (Neal & Christens, 2014) because too often, in psychology or even community psychology, community level phenomena are studied by aggregating individual level data that may result in a poor fit between assessment and conceptualisation (Shinn, 1990). As a method, network perspective assesses context by exploring the pattern of relationships between actors in a setting and identifying key elements of social interaction in communities (Wellman, 1988). Thus, as Palli (2003) argued that cultural diversity involves variability in the meanings of community, and communities' relational features are constructed through historical contexts, it fits well to capture both cultural and historical contexts of a community.

In summary, from the literature reviewed above, what counts as "community" is defined by three main features. Firstly, community is locality; that is, what constitutes community is location or geographical boundary. Secondly, community is relation; that is, the existence of community is the function of the interpersonal and social relationships that form it. Thirdly, community is commonality; that is, the common values, norms, interests, and shared history that connect people to a network.

Taking into account that disasters disrupt a community's ability to function, it is critical to understand what gets disrupted by disasters and why disasters compel a community to take social action (see Chapter 2). In this regard, it is crucial to conceive community as a network of people who connect to each other in social relations as they share common values and norms - including cultural values and norms - and history. Community, in other words, is a network of social relations that has its cultural and historical contexts in a specific locality. Furthermore, community is contextual because the culture and history of community make up its contextuality.

3.2 Sense of community

Sense of community (SOC) has become a key construct for community psychology since Sarason's (1974) seminal book entitled *The psychological sense of community: Prospects for a community psychology*. Sarason posited SOC as an overarching value for community psychology. Yet, he noted that SOC as a concept is not a familiar one in psychology because:

It does not sound precise, it obviously reflects a value judgment, and does not sound compatible with "hard" science. It is a phrase which is associated in the minds of many psychologists with a kind of maudlin togetherness, a tear-soaked emotional drappiness that misguided do-gooders seek to experience. (pp. 156-157)

Sarason described SOC as the sense that one belongs in and is meaningfully part of a larger collectivity. It is the sense that there is a network of and structure to relationships.

Ever since its introduction in Sarason's influential book, SOC has been regarded as the field of community psychology's spirit (Lorion & Newbrough, 1996) and

subsequently the development of the concept of SOC has flourished. A body of research has supported its theorisation and much of the conceptualisation of SOC has been associated with McMillan and Chavis's (1986) definition and four elements of SOC (Bess et al., 2002; Chipuer & Pretty, 1999; Neal & Neal, 2014; Peterson, Speer, & Hughey, 2006; Peterson, Speer, & McMillan, 2008). McMillan and Chavis's work (1986) has been regarded as systematising the introduction of the construct made by Sarason (Long & Perkins, 2003). Furthermore, McMillan and Chavis's SOC model has been the most adopted theory of SOC because, as Chipuer and Pretty (1999) pointed out, none of the alternate models are grounded in psychological theory to the same extent as McMillan and Chavis's SOC model. It is, by far, the most cited in the study of SOC in community psychology.

McMillan and Chavis (1986) defined SOC as the feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together. From this definition they proposed that SOC comprises four elements: membership, influence, integration and fulfilment of needs, and shared emotional connection. Each component interacts in varying degrees to construct a sense of community.

The first component, membership, is the feeling of belonging to and the identification with a group. It is also a feeling that one has contributed oneself in order to be part of a group. Moreover, it is from membership that individuals derive their identities. Membership provides boundaries of who is in and who is out. Language, dress, and rituals are frequently used to create boundaries between communities (McMillan & Chavis, 1986). Boundaries can be sources of protection against threat, by which they create barriers to delineate "us" and "them" and those who can and

cannot be trusted. In addition, membership communicates a set of rights and responsibilities.

Beside boundaries, membership has other attributes: emotional safety, a sense of belonging and identification, personal investment, and a common symbol system. Boundaries enable closeness, which can provide physical and emotional security for members. Furthermore, the more one works for membership, the more one feels one has earned a place in the group and the more meaningful and valuable one's membership. Membership is maintained and reinforced by a common symbol system, such as rites of passage, language, and outfit. Such common symbol systems are used as a social convention to intentionally produce social distance between those who are members and those who are not.

The second component, influence, is a bidirectional notion that relates to the members' feelings that they have some influence on the group, as well as the influence that the group has over members. It reflects the degree of influence over the decisions and courses of a community that a person perceives, and *vice versa*, the degree that the group has influence over individual. The more one feels influential, the more one is attracted to a community. Moreover, it can determine the extent that one will conform with the group and make one's actions uniform, which comes from the need for consensual validation.

The third component, integration and fulfillment of needs, refers to the motivation for reinforcement that individuals seek from their membership in a community. People do not blindly fulfill their needs because the reinforcement they seek from their community is based on shared values. So, shared values provide a structure to fit people together so that people satisfy needs of others while satisfying their own needs. Therefore, it is both the needs and shared values that maintain the

sense of togetherness in a community. Thus, a strong community is a community that is able to fit people together so that people fulfill others' needs while they fulfill their own, directed by community's shared values.

Finally, the fourth component, shared emotional connection, refers to the sharing of important events and the quality of interaction between members. In other words, the emotional connection is, in part, based on a shared history. However, it is not a prerequisite to participate in the history of the community in order to share it. What is necessary is more identifying with it. A shared emotional connection reflects that the development of that emotional connection associates with the extent of the number of events that have been experienced, the salience of the events, and the importance of the events in establishing advantage or status to the community and its members.

Based on McMillan and Chavis's conception of SOC, Perkins, Florin, Rich, Wandersman, and Chavis (1990) developed the Sense of Community Index (SCI), a 12-item scale to measure SOC. Notwithstanding it was originally developed for use in only one community setting (a block neighbourhood), SCI has been widely used to quantitatively measure SOC in diverse community settings (Chipuer & Pretty, 1999). The availability of SCI for measuring SOC facilitated reviews of SOC and its four components.

Many of the reviews were conducted by examining the factor structure and construct validity of the SCI (Chipuer & Pretty, 1999; Flaherty, Zwick, & Bouchey, 2014; Long & Perkins, 2003; Obst, Smith, & Zinkiewicz, 2002; Obst & White, 2004; Peterson et al., 2006; Peterson et al., 2008). The reviews revealed instability in the factor structure and inconsistent psychometric properties of SCI. For example, Chipuer and Pretty (1999) found that the hypothesised four-part structure of SCI was not consistently present across different data sets from different community settings

investigated. SCI appeared to be uni-dimensional or a one-factor index, instead of a four-factor index. Long and Perkins (2003) found SCI was neither a one-factor nor a four-factor index, so it did not corroborate McMillan and Chavis's SOC model. Instead, SCI was a three-factor index (Long & Perkins, 2003). Another example was Obst et al. (2002), who provided support for McMillan and Chavis's four components but identified and thus added the fifth component: conscious identification (the existence of a strong relationship between an individual's self image and membership in a community).

Many studies (e.g. Chipuer & Pretty, 1999; Flaherty et al., 2014; Long & Perkins, 2003; Obst & White, 2004) that were critical of McMillan and Chavis's SOC model assessed the factor structure of SCI and did not necessarily examine the SOC model itself. Interestingly, empirical support for four-structure SOC came from qualitative studies (García, Giuliani, & Wiesenfeld, 1999; Plas & Lewis, 1996; Sonn & Fisher, 1996). In spite of that, McMillan and Chavis's SOC model retains its prominence and popularity because of the availability of SCI, which was developed in reference to McMillan and Chavis's SOC model.

Despite its popularity, McMillan and Chavis's conception of SOC is not without any contention (see Hill, 1996; Hughey, Speer, & Peterson, 1999). There are scholars, for example Buckner (1988), Davidson and Cotter (1986), Nasar and Julian (1995), Nowell and Boyd (2010), and Tartaglia (2006) who proposed alternate theories, models and/or measures of SOC. McMillan (1996) rearranged and renamed SOC components as spirit, trust, trade, and art. This new proposition from McMillan, however, did not attract much attention despite him being one of the originators of the most cited SOC conception. One quite recent proposal is from Nowell and Boyd (2010) who redefined SOC as an individual's sense that their community serves as a

resource for meeting basic physiological and psychological needs, including the need for affiliation, power, and affection. In the recent study by Flaherty et al. (2014), they found further evidence of poor performance of SCI – a lack of invariance – and invoked the question of why scholars keep on using it. Moreover, they concluded the desire to have some level of comparability with previous work was the main reason. On this account, they have been calling for measures of SOC other than SCI.

Pretty, Bishop, Fisher, and Sonn (2006) found discussions around empirical evidence of sense of community include how it is best assessed, quantitatively or qualitatively. Ever since the introduction of McMillan and Chavis's model of SOC and construction of SCI as its measurement, studies of SOC are predominantly quantitative. This means that SOC is treated more as an individual-level construct, which can be an illusive cognition and affect without being based on experiencing individual-level transactions (Pretty et al., 2006). In this regard, SOC is viewed merely as cognitive and affective attributes that sit inside an individual. SOC, therefore, is seen as a cognitive-perceptual construct (Long & Perkins, 2007). The trap of this approach is, as argued by Bishop and Vicary (2003), that its assessment is hypothetically only applicable to those who have a sense of community. The implication is that SOC assessment is possible to carry out in locational communities (Bishop & Vicary, 2003) because without being questioned, whether its actual relationship structure is existent or not, SOC is presumed to exist within individuals. Treating it as an individual-level construct means SOC is typically aggregated from individuals' scores, and assessed further using correlational methods and in association with other variables (Bishop & Vicary, 2003). In contrast to locational communities, SOC assessment is more difficult in relational communities because

features of inter-individual relations and community processes are not the focus of the conventional assessment of SOC using quantitative measures such as SCI.

Mostly treating SOC as an individual-level construct and quantitatively assessing it, studies have found sense of community is related to increased individual wellbeing (Davidson & Cotter, 1991; Plas & Lewis, 1996), quality of life (Gattino, Piccoli, Fassio, & Rollero, 2013; Mak, Cheung, & Law, 2009), life satisfaction (Hombrados-Mendieta, Gomez-Jacinto, Dominguez-Fuentes, & Garcia-Leiva, 2013; Prezza, Amici, Roberti, & Tedeschi, 2001), social support (Mak et al., 2009), political participation (Xu, Perkins, & Chow, 2010), volunteerism (Omoto & Malsch, 2005; Omoto & Packard, 2016); lower levels of loneliness (Pretty, Andrewes, & Collett, 1994; Prezza et al., 2001), and health and psychological problems (Davidson & Cotter, 1991; Huang & Wong, 2014; Li et al., 2011; Riger & Lavrakas, 1981). Moreover, some studies suggested that SOC is a psychological construct, a correlate, or a dimension of individual-level social capital (Mancini, Martin, & Bowen, 2003; Perkins, Hughey, & Speer, 2002; Pooley, Cohen, & Pike, 2005). In addition, studies found that sense of community is higher in individuals who live in a small town (Fassio, Rollero, & De Piccoli, 2013; Gattino et al., 2013).

Sense of community has been studied in diverse settings of community (Hombrados-Mendieta et al., 2013; Mak et al., 2009; Obst et al., 2002; Sonn & Fisher, 1996) including neighbourhoods, schools, workplaces, interest groups, immigrants, and cyberspace or virtual communities as well as layers of nested sub-communities (Brodsky, 2009; Brodsky & Marx, 2001). Studies dominantly investigate SOC at an individual-level of analysis (Long & Perkins, 2007) and treat it as a bi-polar construct (Bess et al., 2002), where it is quantified as having high or low scores on SOC. As a result, SOC is mostly examined as a uni-dimensional construct (Brodsky, 2009),

which mostly views the scores obtained as indicating either the presence or the absence of it. Furthermore, most studies take up the theoretical position of treating high scores on SOC as representing positive and healthy communities (Bess et al., 2002; Brodsky, 2009). Nevertheless, high scores on SOC do not always imply a healthy community. The consequences of sense of community are not always straight (Mannarini, Rochira, & Talò, 2014): positive SOC is not always linearly associated with positive outcomes, nor is negative SOC always linearly associated with negative outcomes. Instead, high scores on SOC could potentially indicate not only homogeneity, but also close-mindedness of a community as in a racist community (Townley, Kloos, Green, & Franco, 2011).

Bishop and Vicary (2003) argued that the study of SOC should be compelled to be more exploratory in nature and qualitative. By so doing, it would allow an understanding of SOC as not only a desired state and outcome variable, but also a process in which the members of a community interact, draw identity and social support, and make their own contributions to the common good (Bess et al., 2002). That said, qualitative studies are better in assessing SOC because actual interactions within a community that reflect the process and experience of SOC can be grasped thoroughly. The use of qualitative methodology in assessing SOC allows a greater possibility in understanding shared community narratives, by which sense of community can be understood (Rappaport, 2000). As argued by Rappaport (2000), SOC can be evident in its shared stories: that is, common stories that people hold about where they come from, who they are, and who they will or want to be. The stories are the text and subtext of culture and context. Accordingly, to understand culture and context is to understand community stories or narratives.

Assessing SOC through understanding shared community narratives by using qualitative methods has the merit of upholding the core values of community psychology (Banyard & Miller, 1998). It puts a valuation of diversity into practice (Banyard & Miller, 1998) since the use of methods such as in-depth interviews, focus groups, and participant observation allow thick description of studied phenomena (Geertz, 1973) and allow research to capture a community's history as that community goes through a series of changes (Sarason, 1974). The thick, rich description allows for capturing both the diversity and the specificity not only in terms of human behaviour, but also voices and views that exist in the community. In this regard, qualitative methodology helps to alleviate the problematic of promoting SOC that tends to emphasise group similarity and homogeneity and potentially overlooks diversity and heterogeneity of experience and perspective (Townley et al., 2011).

The use of qualitative methodology helps community psychologists (or community researchers) to sustain another community psychology core value: context. It is one of the tenets of an ecological framework (Kelly, 2006) that human behaviour can be better understood when put in context. Qualitative methods allow a detailed assessment of SOC and the contexts in which it occurs or is in the process of developing. As indicated by Rappaport (2000), putting context as important to understand human actions and experiences means that it is important to examine the working of culture (Kral et al., 2011). Taking into account the significance of culture requires the attention to two related notions (Sarason, 1974). One is social, in which the structure, functions, and interrelationships between institutions occur in a particular context of community. The other is psychological, concerning how culture is grasped by individuals, and how it provides them with a set of values and categories of thought that gives explanations about their world. Moreover, as Gergen, Josselson,

and Freeman (2015) pointed out, the use of qualitative methodology fosters an understanding of lived experiences of human beings and thus becomes central to the knowledge of human actions.

The debate on the assessment of SOC reflects diverse views on the conceptualisation of SOC. The credential of McMillan and Chavis's SOC model as the most referenced SOC concept comes not only because it systematised the construct of SOC as introduced by Sarason (1974), but also accommodated the conceptualisation of community both as geographical and relational (Chipuer & Pretty, 1999). Moreover, the construction of SCI means the model and the measure are integrated with one another; and both the model and scale are viewed as thoroughly grounded in psychological theory. However, the reliance on the use of SCI means the relational characteristics of SOC, which signify processes of social interaction, are untapped.

The pioneering work of Sarason (1974) and McMillan and Chavis (1986) described SOC as individual-level feeling, at best including the cognition toward the community that one is part of or becomes a member. Following such logic, it is usually viewed as an end state (Bess et al., 2002), which in turn associates with or is a predictor of other variables or outcomes. On the contrary, Pretty et al. (2006) described it as an extra-individual construct and as a process that depicts interaction, identification, social support, and contribution to the common good (Bess et al., 2002).

As a process, SOC develops through relations that are established over time. (García et al., 1999). According to Sarason (1986), SOC arises from the dynamic relationship between individual and community. It is part of day-to-day life (Sarason, 1974) and develops through events, including events of tragedy (Sarason, 1974),

oppression (Sonn & Fisher, 1998), disaster (Huang & Wong, 2014; Li et al., 2011), and problems that people in a community face. The way such events are interpreted in the light of historical consciousness and are integrated into everyday life becomes crucial to sense of community (García et al., 1999). In this regard, therefore, conceptualising SOC as a process is of paramount importance because in itself SOC is dynamic, changing with events in a community (Sarason, 1974) and has a strong contextual nature (Hill, 1996). Thus, the investigation of SOC as a contextual process, and following a change (or series of changes) that occurs to a community, is an important way to fine-tune the theories of SOC (Loomis, Dockett, & Brodsky, 2004).

In summary, SOC needs to be conceived as the group-level experience of community or the community experience of sense of community, in contrast to the individual experience of sense of community (Bess et al., 2002). Its investigation needs to give full regard to the processes of social interaction in a contextual community. It is, therefore, the inclination of the present study not to use SCI, but to employ qualitative methodology that has merit in providing valuable insights into processes in a specific community (Puddifoot, 1996) and a greater understanding of shared community narratives (Rappaport, 2000).

3.3 Place attachment

In community psychology, it is crucial to understand human behaviour in context (Kelly, 2006; Shinn & Rapkin, 2000; Trickett, 2009). As such the ecological perspective (Kelly, 2006) has been a key framework in community psychology. According to the ecological perspective, the human ecology, which includes social environment and natural and built environments, and how it interacts with humans, is of central importance for understanding people in a community context and the

community context itself (Trickett, 2009). Within this perspective, people are seen as agentic and not merely as reactors to their environmental pressures (Riger, 2001).

With the basic premise that person and place are intertwined such that places serve to shape behaviour (Nowell, Berkowitz, Deacon, & Foster-Fishman, 2006), the psychological dimension of experiencing place is understood as important (Dixon & Durrheim, 2000; Pretty, Chipuer, & Bramston, 2003). Place, its geographical location and its natural and built environments is found to contribute to the affect, cognition, and behaviour dimensions of one's sense of community (Pretty et al., 2006). A number of studies have found that sense of community is inextricably linked with place (Long & Perkins, 2007) and associated with the physical and built environment of communities (French et al., 2014; Kim & Kaplan, 2004; Long & Perkins, 2007; Plas & Lewis, 1996; Pretty et al., 2003; Puddifoot, 1996). For example, Kim and Kaplan's study (2004) found that physical features such as the overall layout of the community and traditional architectural style impacted on greater sense of community and stronger attachment to community and sense of identity with community. More recently, French et al. (2014) found built environment that facilitated greater social interactions (e.g., pedestrian friendly neighbourhoods) had a positive association with a stronger sense of community.

Place attachment is one of the place-related concepts (others are place identity and sense of place) that has been studied frequently in connection with the concept of sense of community. It is because not only is place attachment at the core of studies on people and place in today's literature (Gattino et al., 2013; Lewicka, 2011b), but is also similar with and can complement sense of community (Hidalgo & Hernandez, 2001; Manzo & Perkins, 2006). Some studies (e.g., Brown & Perkins, 1992; Long & Perkins, 2007; Perkins & Long, 2002; Pretty, 2002) suggested evidence about the

relationship between place attachment and sense of community. Nevertheless, differences exist regarding to what extent place attachment and sense of community are related. For example, according to Tartaglia (2006), place attachment is a component of sense of community. Meanwhile, Pretty et al. (2003) and Jorgensen and Stedman (2006) argued differently that place attachment and sense of community are dimensions that form sense of place. Above all else, the aforementioned studies suggest that place attachment and sense of community are related but separate phenomena (Long & Perkins, 2007).

Altman and Low (1992) defined place attachment as the affective bond between people and places. It is an at-individual-level concept, which denotes one's desire to maintain closeness to a place (Hidalgo & Hernandez, 2001). Attachment to place is not given as simply as people inhabit a place. Instead, it develops as people experience it. People's attachment to place develops as place becomes a unit of environmental experience (Canter, 1986) where people as inhabitants give meaning to it through personal, social, and cultural processes (Altman & Low, 1992; Milligan, 1998). According to Tuan (1974) in his classic work, undifferentiated space evolves into place as we get to know places better and endow them with value. A strong affective bond, therefore, can only be achieved if repeated interactions with and within places occur so that meanings are acquired.

Brown and Perkins (1992) proposed a definition that synthesised others across a multitude of disciplines (Mihaylov & Perkins, 2013). Brown and Perkins's definition pointed out that place attachment arises from experience with sociophysical environment. Brown and Perkins (1992) described place attachment:

...involves positively experienced bonds, sometimes occurring without awareness, that are developed over time from the behavioral, affective, and

cognitive ties between individuals and/or groups and their sociophysical environment. These bonds provide a framework for both individual and communal aspects of identity and have both stabilizing and dynamic features. (p. 284)

In addition to its association with sense of community, place attachment is found to be an indicator of community functioning, where the greater place attachment is, the greater freedom of behaviour, exploration, confidence, and affective responsive within the local community (Fried, 2000). It also associates with a higher social bonding and rootedness (Riger & Lavrakas, 1981), community participation and planning (Manzo & Perkins, 2006), civic activity (Lewicka, 2005), social well-being (Rollero & De Piccoli, 2010), a higher sense of coherence, satisfaction with life overall, stronger social capital and neighbourhood ties, interest in family roots, trust in others, and lower egocentrism (Lewicka, 2011a).

Place attachment refers to people's affective tie with places, but it comprises not only affective component, but also cognitive and conative or behavioural components (Altman & Low, 1992; Kyle, Mowen, & Tarrant, 2004). Of the three components, the affective component is the most frequently assessed (Jorgensen & Stedman, 2006; Lewicka, 2008). Although the impetus of scholarship on place attachment was when Altman and Low (1992) co-edited the seminal book of *Place attachment*, the first attempt to examine dimensions of place attachment was conducted about one decade before the publication of the book. It was Riger and Lavrakas (1981) whose study found that place attachment has two dimensions of social bonding and physical rootedness. This study began to suggest two distinctive components of place attachment: social and physical features of place. Based on these two dimensions, Riger and Lavrakas proposed a typology that asserted four patterns of place

attachment: (1) low bonded and low rooted; (2) high bonded and low rooted; (3) low bonded and high rooted; (4) high bonded and high rooted.

The finding of Riger and Lavrakas' study on dimensions of place attachment was later elaborated by Taylor, Gottfredson, and Brower (1985) who also asserted that place attachment had two dimensions. By pointing out that the oblique rotation method used in Riger and Lavrakas' posed a serious problem in achieving clear conceptual clusters, they claimed their study had carried out a better method of analysis. Even so, they proposed similar but different dimensions: (1) rooted and involvement and (2) acquaintanceship.

Later studies, including Altman and Low (1992), have essentially accounted similar findings about social and physical dimensions of place attachment (Hidalgo & Hernandez, 2001; Manzo & Perkins, 2006; Milligan, 1998; Sugihara & Evans, 2000). These two dimensions have been found in the studies in different settings: rural (Brehm, Eisenhauer, & Krannich, 2004; Pretty et al., 2003) and urban (Brown, Perkins, & Brown, 2003; Brown & Perkins, 1992). Nevertheless, social attachment is found to be greater than physical attachment in its influence on the growth of place attachment (Hidalgo & Hernandez, 2001). This suggests that people are feeling attached to social relationships that occur in a place, not merely to place qua place (Altman & Low, 1992).

Morgan (2010) claimed that place attachment theory lacks a developmental explanation despite the fact it is known to develop over time. Describing it as a long-term affective bond to place, Morgan posited that place attachment grows from a childhood experience with place. Further, he explained that place attachment results from a pattern of positively affected experiences of place in childhood that are generalised into an unconscious internal working model of place. Individuals'

attachment to place stems from the emergence of pleasure that is associated with childhood place experience. Moreover, Morgan pointed out the prominence of positive affect associated with childhood place experience that contributes to the development of identity. The study from Morgan provides significant knowledge with regard to developmental framework of place attachment. This also supports previous studies from Dallago et al. (2009), which regarded adolescence as a critical period for the development of place attachment, and from Hay (1998), which suggested place attachment function is a resilience factor against identity crises that occur during adolescence.

Scannell and Gifford (2010) proposed the tripartite model of place attachment. This model synthesises three different dimensions of place attachment – person, process, and place – into a three-dimensional organising framework. The person dimension refers to the occurrence of place attachment not only at the individual level but also at the group level. At the individual level, place attachment entails the personal connections through experiences that one has to a place. At the group level, place attachment is linked with the symbolic meanings of a place that are shared among group members. Moreover, the symbolic meanings can be historical, cultural, and religious and are derived from belongingness to respective groups. Place conveys cues about personal history as a member of a community; communicates messages about the value and character of the community; and defines social norms and behaviour within the community (Nowell et al., 2006).

The process dimension reiterates what has been suggested by previous views: that place attachment comprises affective, cognitive, and conative/behavioural components. According to Scannell and Gifford (2010) the process dimension covers the way individuals and groups relate to a place and the nature of the psychological

interactions that happen in the places that are significant to them. Attachment to place is grounded in a range of emotions, especially positive emotions such as love, pride, and happiness that follow connections with a place. In this regard, Morgan's (2010) proposition that posits developmental accounts of place attachment fits in with Scannell and Gifford's process dimension. In addition, individual attachment to place involves memories, beliefs, meaning, and knowledge that is associated with place. Place attachment eventually includes actions, through which individuals maintain closeness to place important to them in any possible ways.

The place dimension refers to both physical and social features of a place. This also again reiterates what has been suggested by previous views that people attach to physical environment as well as to social interactions and symbols that are present in place. Scannell and Gifford's tripartite model is, by far, the most comprehensive model of place attachment (Mihaylov & Perkins, 2013). Nonetheless, after examining the studies of place attachment in the last four decades, recently Lewicka (2011b) noted that the person dimension has drawn disproportionately more investigation than the process and place dimensions.

Place attachment links to multitude positive outcomes, nevertheless it may pose issues. Among many others, it can decrease mobility and subsequently limit future life opportunities (Fried, 2000; Twigger-Ross & Uzzell, 1996), aggravate local opposition to new development (Devine-Wright, 2009), or increase unwillingness to evacuate in the face of disasters (Druzhinina & Palma-Oliveira, 2004). With regard to disasters, there have been studies that have investigated the role of place attachment on disaster preparedness. The findings show that the stronger people's attachment to place, the more prepared for disasters (Bachrach & Zautra, 1985; Paton, 2001; Turner, Nigg, & Paz, 1986). Contradictorily, De Dominicis, Fornara, Cancellieri, Twigger-Ross, and

Bonaiuto (2015) pointed out that place attachment is not necessarily correlated with intentions and actions to mitigate anticipated flooding. This study suggested that people's willingness to mitigate diminishes when high place attachment is associated with high risk perception. Another study by Mishra, Mazumdar, and Suar (2010) suggested an insightful finding that individuals whose attachment is more genealogical and economic are more prepared than individuals whose attachment is religious. Interestingly, Anton and Lawrence (2014, 2016) found that place attachment is associated with disaster preparedness only for individuals living in rural areas. One explanation for this finding is that place attachment is linked to attachment to homes, and those living in rural areas show higher attachment to their homes.

Despite the growing interest in the studies of people-place relations and place attachment, there still seems to be little interest and investigation in the topics of dislocation or disruption of place attachment (Dixon & Durrheim, 2004). Brown and Perkins (1992) were first to use the label "disruption of place attachment" for describing changes to the physical fabric that threatens one's feeling for relationship with place. Disruption of place attachment can arise from disruptive events that are prompted by natural or human-made causes. It includes relocation caused by disasters (Brown & Perkins, 1992) or development projects (Devine-Wright & Howes, 2010; Milligan, 2003). Relocation is displacement and is disruptive to place attachment because changes that follow relocation may create a sense of discontinuity (Fried, 2000), threat to identity (Bonaiuto, Breakwell, & Cano, 1996; Devine-Wright & Howes, 2010; Milligan, 2003), and problems of nostalgia, disorientation, and alienation (Fullilove, 1996). Boğaç (2009) provided empirical evidence that people develop attachment to a new place as they get resettled. People's attachment to a new

place is shaped by their future expectations and, unsurprisingly, their degree of attachment to a previous place.

Disasters and relocation engender disruption to place attachment. Disasters and relocation potentially obstruct the intimate relations between humans and place that give structure to human experience and meanings. Borrowing from Relph (1976), Arefi (1999) coined placelessness as a consequence of the annihilation of place, which in turn results in disruption to place attachment. Placelessness refers to a narrative of loss. The main characterisation of narrative of loss is the feeling of loss of meaning (Ruiz & Hernandez, 2014), that one loses sight of what constitute meaningful place and may feel an inauthenticity (Relph, 1976).

3.4 Place identity

Place identity is a core concept in the field of environmental psychology (Lalli, 1992) and its early scholarship begins from the field of human geography. Initial conceptions of place identity can be traced to as early as the works of human geographers such as Yi-Fu Tuan and Edward Relph, who took a phenomenological approach to describe how people acquire sense of self through the intentional activity of attributing place meanings (Dixon & Durrheim, 2004). Both Tuan (1980) and Relph (1976) pointed out that the central function of place is to generate a sense of belonging and attachment. Place identity is constructed as an individual develops unselfconscious intentionality to define place as the centre of existence (Relph, 1976) and unselfconscious association with place (Tuan, 1980). Place identity is rooted and centred in and around the places individuals feel attached to and from which they gain a sense of belonging and purpose. In this regard, home is regarded as the place of greatest personal importance in an individual's life (Relph, 1976). Accordingly, place

identity is also conceived as a function of the degree to which the activities that are important to one's life are based in and around home (Buttimer, 1980). As found in poems, songs, stories, and other narratives about home or other emotionally-invoked places, Tuan (1991) further asserted that language and verbal processes such as story telling are crucial in the attribution and recognition of place meanings.

Another human geography theorist, Rowles (1983) posited a sense of insideness in place that preserves one's sense of identity. Insideness arises from individuals' habituation to their physical surroundings. Through habituation – a deep-seated familiarity with the environment – individuals develop a sense of bodily, sensuous, social and autobiographic insideness (Rowles, 1983). Particularly important is autobiographical insideness, which represents historical dimensions of past, remembered places. As it is autobiographical, place identity eventually represents what is personally imaged and given meaning in ways that are special to an individual. This implies that autobiographical insideness is mostly personal and idiosyncratic (Rowles, 1983).

Nevertheless, the phenomenological and humanistic approach is considered as lacking construct clarity in defining place identity (Stedman, 2002). It is lacking psychometric characterisation as is found in quantitative approaches and as such quantification and hypothesis testing are difficult to achieve using this approach. In addition, this approach has another issue, which is that the description of one's place identity in its full meaning remains difficult to be recounted because its unselfconscious attribute and its subjective representation, whether cognitive or affective, remain inside experiences (Seamon, 2015). The full account of one's place identity can mostly be described only when one is in difficulty: when one's place

identity is threatened that makes a person becomes aware of it (Proshansky, Fabian, & Kaminoff, 1983).

The concept of place identity has attracted much academic attention since Proshansky et al. (1983) published the *Journal of Environmental Psychology*'s article "Place identity: Physical world socialization of the self". Proshansky et al. (1983) defined place identity as "a sub-structure of the self-identity of the person consisting of, broadly conceived, cognitions about the physical world in which the individual lives" (p. 59).

In this definition, place identity is described as part of self and part of a person's identity. It is a cognitive component of self that is constructed from being in a place. As cognition, it comprises memories, ideas, feelings, attitudes, values, preferences, meanings, and conceptions of behaviour and experience that relate to the variety and complexity of physical settings that shape the day-to-day existence of individuals. As Proshansky et al. (1983) described it, rather than a coherent and integrated cognitive substructure, place identity is a "potpourri" of memories, conceptions, interpretations, ideas, and related feelings about specific physical settings as well as types of setting.

People develop place identity by locating themselves in the geographical ecology (Proshansky et al., 1983). It is an enduring and yet a changing cognitive structure. One's place identity grows out of hands-on experiences with the physical environment that transform the stage of "now going on" to the stage of "being remembered". A physical environment is integrated into one's place-based identity as it becomes the environmental past: a past comprising place, space, and their properties that significantly satisfy one's biological, psychological, social, and cultural needs. As asserted by Proshansky et al. (1983), people do more than experience and record their physical environments. People subsume particular values, attitudes, feelings, and

beliefs that emerge from experiences with their physical environments into their cognitions.

The strength of Proshansky et al.'s (1983) conception is elucidating the concept that was once ambiguous (Sarbin, 1983). Nevertheless, Proshansky et al.'s conception represents a rather structuralist approach (Devine-Wright, 2009) since it emphasises the influence of environment as a larger structure on human experience. By claiming to adopt a humanistic approach, Sarbin (1983) put forward a criticism that the proposition from Proshansky et al. failed to make use of an important organising principle familiarly used by poets, biographers, autobiographers, and dramatists: emplotment. Sarbin argued that, to construct place identity, one constructs personal narratives, complete with plots and sub-plots, that include dramatis personae, settings, goals, beginnings and endings, and climaxes and anti-climaxes. In addition to his criticism, Sarbin shared a similar thought to Proshansky et al. as he pointed out that a person does not merely record experience, but more importantly renders experience so it becomes a unique personal narrative.

Proshansky et al.'s model provides a thorough explanation of how place identity as part of self is constructed (Sarbin, 1983). However, it appears to be lacking in explanations on what processes guide action "from place to identity" (Korpela, 1989). It does not provide an explanation of how or why places become salient for self-concept (Twigger-Ross & Uzzell, 1996). Following a review on Breakwell (1992) model of identity, Twigger-Ross and Uzzell (1996) put forward that identity processes follow four principles: continuity, self esteem, self-efficacy, and distinctiveness. According to Twigger-Ross and Uzzell, place is a means to preserve a sense of continuity, to build self-esteem, to create a sense of self-efficacy, and to distinguish oneself from others. In this way, Twigger-Ross and Uzzell reinvigorated Korpela

(1989) assertion on the relationship between place and identity. Korpela stated that the physical environment is used as a strategy for the maintenance of self. Moreover, Korpela (1989) provided an argument about three principles that guide the use of the physical environment for the maintenance of self, which are: the need to maximise the pleasure/pain balance, the need to maintain a coherent conceptual system, and the need to maintain a favourable level of self-esteem.

Similar to Twigger-Ross and Uzzell's and Korpela's propositions is Hull, Lam, and Vigo's (1994) contention that highlighted the symbolic significance of place to one's self. According to Hull, Lam, and Vigo, the physical environment contains symbols that convey to us something about ourselves and something about those to whom the symbols belong. In other words, the features of the physical environment serve as symbols for meanings that contribute the greatest significance to one's self and self identity.

Besides the aforementioned approaches (e.g., the phenomenological and humanistic approach as in Tuan, Relph, or Sarbin; and the structuralist as in Proshansky et al.), there are other approaches such as socio-cognitive and discursive approaches. The socio-cognitive approach is mostly based on a positivistic stance and draws on social cognition theory. As an approach, not only is it different in its methodology and orientation toward hypothesis testing, but also its emphasis on cognition. This approach specifically puts emphasis on one's attitude toward place. Similar to the notion postulated by Proshansky et al., the socio-cognitive approach suggests that place identity is based in cognition (Devine-Wright & Clayton, 2010; Stedman, 2002).

The socio-cognitive approach and the phenomenological and humanistic approach share the same notion about the importance of meanings symbolised by

place features (Hull et al., 1994). Meanings are attached to a place as one experiences a place and imbues it with meanings (Rowles, 1983; Stedman, 2002). Place-based meanings convey who we are and are not, how we have changed and into what we are changing (Hull et al., 1994). Like the phenomenological and humanistic approach, the socio-cognitive approach has the same tendency to emphasise the individualistic dimensions of place identity, in that these approaches largely ignore the social dimension of place identification (Dixon & Durrheim, 2000).

A non-individualistic, critical, and more action oriented conception of place identity is proposed by the discursive approach (Sonn, Quayle, & Kasat, 2015). The stance of the discursive approach is known to be influenced by the phenomenological and humanistic approach (Dixon & Durrheim, 2004). The discursive approach essentially elaborates Tuan's (1991) proposition that speech is important to understand and explain about the significance of place. It underlines that place identity is formed, reproduced, and modified based on collective practices. Place identity is something that people create together through conversation (Dixon & Durrheim, 2000) and is reconstituted from human dialogue and the interpersonal space of the conversation. Drawing on the recognition of the pivotal role of language (Tuan, 1991), the discursive approach sees language as not only a medium for representing the external environment, but also for displaying a range of social actions through the use of words such as for blaming, justifying, derogating, excusing, excluding, and debating (Dixon & Durrheim, 2000).

Dixon and Durrheim (2004), along the line of the discursive approach's direct criticism to the conception of place as a fixed, empty, and un-dialectical background to social action, posited a different aspect of social dimension of place identity. According to Dixon and Durrheim, place identity is also a function of process locating

self vis-à-vis, in the presence/absence of others. In this sense, place identity is shaped by the history and the dynamic of relations within and between groups (Bernardo & Palma-Oliveira, 2016). As place is repeatedly in the centre of a power clash over spatial inclusion and exclusion, place identity processes are therefore ideological. These processes reflect social classification and division, sectional interest and distributive inequalities, and discrimination in relation to social space with a place. Similar arguments come from Cresswell (1997) and Sibley (1995), whose studies found that the statement of feeling ‘at home’ reflects the comforting realisation of the absence of others and dis-identification with places of others.

Place identity has been under examination not only as a stand-alone concept, but also in its relation to place attachment. The vast majority of literature agrees that place identity is related to place attachment, but there is no agreement in the literature about the manner in which place identity and place attachment are related (Lewicka, 2008). Some posit that place identity and place attachment are dimensions subsumed under the concept of sense of place (Hay, 1998; Jorgensen & Stedman, 2006; Pretty et al., 2003). This suggests, therefore, that place identity and place attachment are separate but related concepts. Others argue that place attachment is a dimension subsumed under the concept of place identity (Lalli, 1992; Puddifoot, 1995). In the opposite direction, others argue place identity arises out of place attachment (Hernández, Hidalgo, Salazar-Laplace, & Hess, 2007) so that it is a dimension of place attachment (Hernández et al., 2007; Kyle, Graefe, & Manning, 2005). Interestingly, others argue that place identity and place attachment are synonymous and, therefore, interchangeable (Brown & Werner, 1985; Stedman, 2002).

Despite still lacking clarity regarding the relation between place identity and place attachment, it is quite clear that these two concepts overlap (Giuliani, 2003;

Hernández et al., 2007; Pretty et al., 2003). There is a general agreement that place attachment is an affective component of bonding with place, while place identity is a cognitive component of self identity (Hernández, Martín, Ruiz, & del Carmen Hidalgo, 2010). Nevertheless, Chow and Healey (2008) contended that there is still ambiguity with regard to relations between place-based concepts in general, and place identity and place attachment in particular. As a result, although there are more studies conducted in an effort to describe and explain human-place relationships, there is still a relatively chaotic literature and unclear articulation under the umbrella term of sense of place (Jorgensen & Stedman, 2006; Pretty et al., 2003).

Place attachment can be disrupted by displacement, and so can place identity. Relocation accounts for a serious threat, among many other things, to the sense of insiderness as the sense of separation (Rowles, 1983) and alienation (Fullilove, 1996) mounts. Relocation is a threat (Devine-Wright & Howes, 2010) and is potentially disruptive to place identity because it brings dysfunction to spatial identity (Fried, 2000), affects identity continuity (Milligan, 2003; Twigger-Ross & Uzzell, 1996), and creates placelessness (Relph, 1976). Dixon and Durrheim (2004) used the term dislocation to describe a loss of self as displacement creates a threat to the constellation of meanings about place. All in all, relocation as a form of displacement inflicts losses and challenges one's place attachment and identity (Warsini, Mills, & Usher, 2014).

3.5 Social capital

Social capital, sense of community, and place are interrelated (Long & Perkins, 2007). As pointed out by Long and Perkins (2007), sense of community along with collective efficacy, neighbouring behaviour, and formal citizen participation are

dimensions of social capital. All four dimensions are place-based as they can be predicted by place attachment as to how one is attached to one's community as a place. In other words, sense of community, collective efficacy, neighbouring behaviour, and formal citizen participation that form social capital are linked to one's connection to place or one's sense of place.

Social capital is argued to be tied to sense of community (Long & Perkins, 2007). The theoretical linkage between social capital and sense of community suggests its growing importance in community psychology as well as in other fields related to community studies. Social capital is one of the trendiest terms in social sciences (Farr, 2004) and has been embraced by different disciplines. As put forward by Portes (1998, 2000), it is one of the most popular terms exported from sociology to other social sciences, including disaster studies (Aldrich, 2015), and to everyday language.

The first known use of the term social capital (Farr, 2004) as an academic concept dated back to 1916 when it was used by Hanifan (1916) to express his concern over country life conditions at the time. Unsurprisingly, over the course of its concept development, much of the social capital literature is to a great extent constructed from the concern for the loss of Tönnies' *gemeinschaft* (Woolcock, 1998). The idea behind the concept itself, however, is not as new as when Hanifan firstly introduced it. The idea, in various forms, can be traced back to theories posited by grand theorists of economic sociology: Durkheim, Marx, Weber, and Simmel (Farr, 2004; Portes, 1998). Lang and Hornburg (1998) noted that the concept of social capital is originated from Durkheim's social integration concept, which was introduced by Durkheim to describe and measure the link between the individual and the group. Nonetheless, it was Pierre Bourdieu, a French sociologist, who proposed the first systematic analysis of social capital. The original work of the analysis of the concept was in French and

dated back to the early 1980s, but it gained momentous attention and appraisal when translated into English in 1986.

According to Bourdieu (1986) social capital is one of capital's forms; others are economic capital and cultural capital. By capital, not only is it a force, but also a principle; the principle underlying the inherent regularities of the social world. Bourdieu (1986) defined social capital as "the aggregate of the actual or potential resources, which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition". Central in Bourdieu's definition is the social relationship from membership in a group and the social network in which individuals can acquire the possession of resources by accessing resources possessed by their networks. For Bourdieu social capital is associated with the size of the network. It has a power function since the bigger the social network or social relations, the increased ability of people, groups, or society to advance their interests. The network itself is the result of investment strategies, either individual or collective, conscious or unconscious, made by individuals. Bourdieu's conception of social capital, however, becomes reductionist, that human actions are interest-bound, utility-orientation, and reducible to economic capital (Portes, 1998).

Another much cited conception of social capital came from the work of Coleman (1988) who examined the role of social capital in the creation of human capital. For Coleman, social capital is defined by its function. In Coleman's formulation, social capital is productive and its function is to achieve particular ends that would have been impossible without it. Therefore, similar to Bourdieu, social capital is instrumental: an instrument to bring about one's interest. Unlike Bourdieu, Coleman focused on the significance of social structure, by which social actions are conditioned. It is through embeddedness within social structure of relationships that

social capital can present and be utilised to achieve actors' interests. Social capital prevails when the relationships among people develop in ways that foster actions. Moreover, such social structure must be characterised by a high degree of trustworthiness and social environment that brings effective norms and access to information. In comparison to Bourdieu's, Coleman's formulation is more social because, according to Coleman, community bonds are important for the benefits they generate for individuals. It is the community, rather than individuals, who receive more benefits from social capital that prevails.

Another important proposition that has received much attention came from Robert Putnam. Unlike the preceding propositions, Putnam's proposition is more political as Putnam links it with the issue of democracy, political participation, and economic advancement, especially in the U.S., and from studies conducted in Italian regions (Putnam, 1993, 1995, 2000). Putnam (1993) asserted that a high degree of political participation and a well-functioning economic system, which results in economic advancement, are the result of positive accumulation of social capital.

Putnam (1993) defined social capital as features of social life: networks, norms, and trust that enable participants to act together more effectively to pursue shared objectives. These three features serve as resources for individuals and enable collective acts. Social capital is a bridging that enhances cooperation, so that the enhanced cooperation will serve broader interests and be broadly accepted. It has two components. First is bonding social capital that represents social networks between homogeneous groups of people. Second is bridging social capital that represents social networks between heterogeneous groups of people.

In his conception, Putnam emphasised the significance of trust. It is an important social value. It creates reciprocity and voluntary associations; reciprocity and

voluntary associations produce and strengthen trust. Following this logic, it can be expected that civic engagement and political participation correlate with the level of social trust in a community/society. As it is more of a political concept, Putnam's conceptualisation of social capital emphasises socio-political structures (e.g., the civil rights revolution, mass media and technological revolution, residential mobility, suburbanisation, disruption of marriage and family ties) that constitute/de-constitute social capital.

The three main theories on social capital vary with regard to their main analytic dimension (economical, social, or political) and focus on communities or individuals. Nonetheless, central in these three conceptualisations is the notion of social capital as social relationships that involve the exchange of resources and provide benefits, either for individuals or for communities. Beside the aforementioned three influential theorists, there are other scholars who are notable in the debates on social capital such as Portes (1998), who argued social capital is a source of social control, family support, and benefits through extra familial networks; Lin (2008), who somewhat restricted the definition of social capital to network ties that are used for accessing diverse resources; and Fukuyama (2001), who, similar to Putnam, equated social capital with trust.

Despite its popularity within social sciences, the concept of social capital is in fact embraced at a slow pace by psychology (Perkins et al., 2002). It is less attractive to psychology because not only it is seen as a new, quasi-economic term, but also it appears to be unclear and imprecisely defined. It tends to be a vague buzzword and the meaning of it becomes less definitive because different people use it to refer to different things (Perkins et al., 2002). Furthermore, social capital is commonly viewed as social context (Perkins et al., 2002) and analysed as a characteristic of

communities, rather than individuals (Perkins & Long, 2002). It remains elusive as it is not interpreted in explicitly psychological terms (Perkins et al., 2002; Wood & Giles-Corti, 2008). This echoes Lochner, Kawachi, and Kennedy (1999) who put forward that social capital is a collective dimension of society that is external to the individual. Social capital is more of a characteristic of the social structure, rather than of the individual within the social structure. In this regard, it has an ecological characteristic (Lochner et al., 1999). However, the theoretical roots of the social capital concept – rational behaviour in economics – are different from the ecological theory that is well-known in community psychology (Saegert & Winkel, 2004).

Nevertheless, within the field of psychology, social capital has been quite extensively studied in community psychology (Perkins et al., 2002). Features of social capital frequently studied by community psychologists, among other things, are sense of community, empowerment, participation, neighbouring, and social support. Sense of community is a dimension of and found to be the most consistent and strongest predictor of social capital (Perkins et al., 2002; Perkins & Long, 2002). Contrary to what was argued by Saegert and Winkel (2004) that the concept of social capital is not rooted in the ecological orientation widely acknowledged in community psychology, Perkins and Long (2002) were able to construct the four dimension of social capital model that fits well with ecological principles.

Perkins and Long (2002) proposed a four-dimension definition of social capital at the individual, psychological level. Social capital consists of four distinct components. It has two cognitive components: sense of community and empowerment; and two behavioural components: neighbouring and citizen participation. Perkins and Long's model also sets out the degree to which sense of community and neighbouring are informally put in place, and the degree to which sense of empowerment and citizen

participation are formally put in place. Perkins and Long further contended that communitarianism, place attachment, community satisfaction, and community confidence are the antecedents of social capital. Perkins and Long's model not only provides a significant contribution to the understanding of social capital both from psychological and community psychological perspectives, but also interestingly emphasise that it can be analysed at multiple levels, including the community level. As Perkins and Long (2002) contended, multi-level analysis is crucial to find out how and how much social capital is manifested at the community level against the individual level.

Despite not being as extensive as in other social sciences, some psychological studies (e.g. Alaimo, Reischl, & Allen, 2010; Campbell & Jovchelovitch, 2000; Perkins et al., 2002; Perkins & Long, 2002; Saegert & Winkel, 1998; Xu et al., 2010) provided psychological accounts of it. Saegert and Winkel (1998), researching city's poor and minority communities, found that social capital predicted the successful revitalisation and maintenance of distressed housing. Similarly, Alaimo et al. (2010) found that social capital is associated with community gardening and beautification projects. Other studies found that it is associated with youth participation (Jarrett, Sullivan, & Watkins, 2005), place attachment (Dallago et al., 2009), general health (Abbott & Freeth, 2008; Pollack & von dem Knesebeck, 2004; Wood & Giles-Corti, 2008), mental health (McKenzie, Whitley, & Weich, 2002), empowerment (Campbell & Jovchelovitch, 2000; Serino, Morciano, Scardigno, & Manuti, 2012), and sense of community (Perkins et al., 2002; Perkins & Long, 2002; Pooley et al., 2005).

Social capital is commonly considered as potentially positive for any aspect of community life across different communities. With regard to participation, however, the influence of social capital is evidently found to be contextual. The results of the

studies from Xu et al. (2010) and Palmer, Perkins, and Xu (2011) found that in China social capital does not predict community participation nor local political participation. This suggests not only the fact that politically China not yet embraces democracy, but also Western conceptions of social capital derived from theories about networking, bonding and bridging ties may be too culturally individualistic for China, whose society is collectivist and strongly characterised by agrarian kinship networks (Xu et al., 2010).

The notion that social capital has not always led to a positive effect on the degree of social cooperation in the society is asserted by Cook (2005). Cook posited a social psychological perspective of social capital. She described it as a network of trust relations that enable social cooperation in the society. Networks of trust transform into social capital only when such networks can be mobilised to serve the interests of the network and those who tie in with the network. Cook, nonetheless, provided an explanation that trust networks may turn to closed networks that subsequently may limit the scope of exchange and hinder the move to more open-network economies of exchange for goods and services. In other words, it is possible social capital as trust networks in itself diminishes processes of change, which eventually leads to ossified networks and limited exchanges that are atypical of the notion of social capital.

The emergence of trust networks often occurs under conditions of uncertainty and risk (Cook, 2005). As a trust network emerges, it encourages social exchange. Disaster and post-disaster situations pose conditions of uncertainty and risk, which engender the emergence, or re-emergence, of trust networks. Along these line, Dynes (2006) urged psychological studies into disasters not only to focus on psychodynamic causation, as in the term of Post-Traumatic Stress Disorder, but more importantly to use the lens of social capital theory for explaining community resilience to disaster.

Community social capital, as Dynes (2005) argued it, is the primary basis for resilience. In addition, Dynes contended that social capital theory is useful “in an analysis of the problems of external aid in disaster since such aid disrupts existing obligations, distorts informational potential, and imposes new authority patterns” (p. 43).

After being largely ignored in comparison to the concern for physical capital in the process of disaster reponse (Dynes, 2006), the focus on social capital presents a new approach in post-disaster recovery (Aldrich, 2015). Social capital as in localised social networks and channels (LaLone, 2012) and collective narratives (Chamlee-Wright & Storr, 2011) is key to disaster recovery (Aldrich, 2015; Aldrich & Meyer, 2015; Chamlee-Wright & Storr, 2011).

The importance of social capital in disaster studies is also pointed out by Nakagawa and Shaw (2004) who put forward that social capital is a missing link to disaster recovery. In their study in the aftermath of the earthquakes in Kobe (Japan) and Gujarat (India), they found that a high trust among community members and a strong tie between community leaders and their communities facilitated a speedy and satisfying recovery. The high level of trust made communities efficient in organising rescue, relief, and recovery efforts. Furthermore, other studies reveal a positive association between social capital and post-disaster mental health (Wind, Fordham, & Komproe, 2011; Wind & Komproe, 2012), gained empowerment for women survivors (Ganapati, 2012), community recovery and resilience (Aldrich, 2010, 2015; Aldrich & Meyer, 2015; Chamlee-Wright & Storr, 2011; Hawkins & Maurer, 2010), and disaster preparedness (Koh & Cadigan, 2008; Reininger et al., 2013).

3.6 Culture

Disasters can bring the destruction of important cultural heritage (Tierney & Oliver-Smith, 2012) and can affect the cultural lives of communities (Hoffman, 1999a). There is not only a drama of impact that a community has to endure, but also cultural change that a community encounters (Hoffman, 1999a; Oliver-Smith, 1996). In this set-up of cultural change post-disaster, this section discusses the concept of culture that includes its ontology, definition, and theorisation.

Culture as a term is polysemous (Jahoda, 2012) and elusive (Kral et al., 2011). As an idea, it sounds so simple but yet so revolutionary because it is not easy to reassess (Bohannon et al., 1973). Williams (1976) called it one of the two or three most complicated words in the English language. Geertz (2000) quite hyperbolically denoted that no one is quite sure what culture is. Regardless, an endeavour to scientifically conceptualise it has been undertaken for more than a century from different disciplines of social science, namely anthropology, sociology, and psychology.

The quest for conceptualising culture started from as early as when the work of Tylor (1871) was published. Tylor infamously put forward the investigation into culture as the science of culture. More importantly, Tylor contended a new meaning of culture in English, which moved away from its older meaning in French as cultivation. Tylor defined culture equivalently as civilisation and posited it as a “complex whole which includes knowledge, belief, art, morals, law, customs, and any other capabilities and habits acquired by a man as a member of society”.

Ever since the first anthropological definition (Kroeber & Kluckhohn, 1952) of culture was proposed by Tylor, attempts to define culture prolifically grew. As a consequence, culture has become a highly contested concept. Different definitions of

culture exist not only between disciplines, but also within disciplines (Kroeber & Parsons, 1958; Rohner, 1984). In anthropology, which is considered as the principal discipline for the inquiry of culture, there is a consensus among anthropologists in referring to culture as a learned phenomenon, shared by members of a population, and one that represents a basic orderliness and regularity of human life under a great deal of circumstances (Rohner, 1984). However, the meaning of culture has changed over time (Eagleton, 2000) in the same way the definition of culture has grown diversely. As noted by Rohner (1984) there are two broad views of culture that are in contrast to each other within anthropology. First, culture is viewed as being behaviour. In this regard, culture is seen as the regularly occurring and organised modes of behaviour in various institutional domains – economic, religious, political, familial – within a population. Second, culture is viewed as a system of meaning. In this view, culture is seen as a symbol system, an ideational system, a rule system, or a cognitive system that exists in the heads of different individuals within a population.

Adding to such differing views are the opposing views about the ontological reality of culture (Pyysiäinen, 2002; Rohner, 1984). Rohner (1984) outlined two ontological arguments. First is cultural realism, which contends culture exists *sui generis*. Culture has a concrete reality of its own. It is external to individuals as it is not biologically or psychologically determined. It is above empirical evidence (Yengoyan, 1986), in which people carry it as a cognitive map (Rohner, 1984) Within this ontological argument, culture is seen as a universal (Pyysiäinen, 2002). As a universal, culture is the intension of the singular predicate of culture-ness.

Second is cultural nominalism, which asserts culture exists as abstract entities resulting from the inference or abstraction in the minds of its investigators. The existence of culture is inferred from regularities observed in the behaviour of diverse

people within a population. This implies that it is not culture per se that guides people's behaviour. It is people's cognitive, affective, and motivational propensities that direct their behaviour, which eventually led the investigators to define it as culture as they found patterns of regularities. Therefore, culture is a logical construction through inferences, interpretation, or empirical generalisation conducted by investigators. In other words, culture is a label assigned by investigators for a set of individuals' behaviours (Pyysiäinen, 2002).

In contrast to Rohner's (1984) summary, Sperber (1996) noted the ontology of culture can be grouped into three arguments: empty materialism, self-contradictory materialism, and dualism or pluralism. Sperber laid his assertion on Marxist materialism's point of view, so central in his view is the material condition. Empty materialism considers that everything is material and culture exists in material form. Culture has its material characteristics. Self-contradictory materialism represents a contradiction in its own right. On the one hand, it holds the view that everything is material. On the other hand, it considers that culture (along with politics) is non-material, which is determined by the material character of ecology and economy. Dualism or pluralism brings a view that one aspect of the material world (e.g., economy) affects another aspect of the material world (e.g., culture).

Pyysiäinen (2002) described a different set of ontological arguments. According to Pyysiäinen, ontologically culture can be determined in four different arguments: realism, nominalism, conceptualism or intuitionism, and modified conceptualism or naturalist intuitionism. The first two are basically the same as what is described by Rohner. As for conceptualism or intuitionism, it holds the view that culture exists in the mind. Substantially, Pyysiäinen argued for culture to be understood from the ontology of modified conceptualism or naturalist intuitionism. Culture is an abstract

whole, a universal, produced by the mind, but it does not exist as fixed and given in the mind. The mind actively constructs it because all of our thinking is based on our experience of the physical reality. So to speak, culture is abstract but bounded entities such as minds work in contexts that provide specific inputs for the minds.

Culture has become a contested concept as it has multiple definitions. A classic work by Kroeber and Kluckhohn (1952) compiled a list of 164 definitions of culture, and it is no surprise the list showed a lack of definitional consensus. Notwithstanding, they proposed their own definition of culture. Kroeber and Kluckhohn (1952) put forward that culture “is a product; is historical; includes ideas, patterns, and values; is selective; is learned; is based upon symbols; and is an abstraction from behaviour and the products of behaviour” (p. 157). Moreover, culture is a system of expectancies. It sets out what is expected. It specifies what kinds of behaviour a person can foresee being rewarded or punished for, what accounts for rewards and punishments, and what kinds of activity are held to be intrinsically fulfilling or dissatisfying. It is worth noting that Kroeber and Kluckhohn’s conception pointed out that culture is not fixed; not necessarily tied up throughout time to a certain community or society. As a product of behaviour, culture is changed or can be changed concretely by individuals.

Kroeber and Kluckhohn’s conception is holistic and represents a humanistic view. Yet, it does not explicitly and precisely convey what it means by abstraction (White & Greenberg, 1954) and it is too broad and too diffuse (Keesing, 1974). Keesing (1974) contended that the challenge in conceptualising culture is to narrow it. To achieve a narrowed, specialised and theoretically more powerful concept of culture (Geertz, 1973), it is necessary to cut the culture concept down to a size that includes less, but reveals more (Keesing, 1974).

Directing his observation to the conception of culture put forward by Tylor (1871), not Kroeber and Kluckhohn, Geertz (1973) proposed a definition of culture that received wide acceptance as well as critical reviews for its notion of symbols. Geertz defined culture as “an historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic form by means of which people communicate, perpetuate and develop their knowledge about and attitudes towards life” (p. 89). For Geertz, culture is not something sealed inside people’s head. Rather, it is embodied in social symbols – symbols that are shared by the members of a society. Symbols are therefore public, not private. The members of a society pass on their worldview, value-orientations, ethos, and all the rest to one another and to younger generations.

By being in culture, people engage in symbolic actions. According to Geertz, the core notion of culture is not the symbols themselves, but how the symbols shape the ways people see, feel, and think about their world. Geertz’s definition of culture puts emphasis on the ways in which symbols perform certain practical operations in the social process (Ortner, 1984) as in, for instance, healing ill-persons through curing rites, respecting nature through offering rites, and so on. Culture operates through symbols. Culture is, consequently, semiotic because of its symbols and the meanings embedded in symbols. To investigate culture is then to investigate the code of meanings shared by members of a population. Studying culture is, therefore, an interpretive analysis in searching for and understanding meaning.

While Kroeber and Parsons (1958) held a view that all human phenomena of human behaviour are sociocultural and in themselves reflect the divergent views over the determinative primacy between cultural and social systems, Geertz’s conception of culture represents the primacy of cultural system over social system – a system of

norms and institutions – and psychological system – a system of personality. In other words, Geertz's conception conveys that society is best understood from the perspective of culture. Geertz's conception has received further elaborations on the notion of symbol by a number of scholars. Schneider (1980), who like Geertz was taught and influenced by Parsons, contended a symbol is something that stands for something else, in which there is no necessary or intrinsic relationship between the symbol and that which it symbolises. Unlike Geertz, Schneider emphasised the internal logic of systems of symbols (Ortner, 1984) by which culturally defined and differentiated cultural objects, or core symbols, are distinguished from other objects that they may or may not represent, stand for, or correspond to. In this way, a clear distinction between cultural action and social action can be made.

It was Turner (1975, 1977) who, on the one hand, refined the concept of culture as symbol and on the other hand provided convergent ideas over the primacy of cultural and social systems. Different from Geertz, Turner viewed symbols as of interest in themselves, not as vehicles of culture nor analytic windows onto culture. Moreover, symbols are factors in social actions. When symbols are put together in certain arrangements in certain contexts, they generate, in essence, social transformations. Symbols, among other things, bring people from one status to another, unite people to the categories and norms of their society, and resolve social contradictions (Turner, 1967). Interestingly, Turner pointed out the power aspect of symbols. He argued that symbols, as in cultural rites in sub-Saharan Africa, are not only messages about values and norms, nor are they merely a set of practical guidelines and a set of symbolic paradigms for everyday actions. They are, in fact, also a fusion of the powers in the persons, objects, relationships, events, and histories represented by symbols. Symbols become powerful as they represent ethical,

aesthetic, political, legal, and ludic ideas, ideals, and rules (Turner, 1973).

Nevertheless, Turner's thoughts on the power notion of culture apparently did not receive much attention and elaboration from other scholars who put their interests in the conceptualisation of culture.

It was anthropologist Eric R. Wolf who eventually examined the connection between power and the concept of culture. According to Wolf (1990) power is implicated in meaning through its role in upholding one version of significance as true, fruitful, or beautiful, against other possibilities that may threaten truth, fruitfulness, or beauty. As one example, it is through sacredness that the power of meanings is preserved. Nonetheless, Wolf's power notion of culture is different from Geertz's and Turner's as Wolf de-emphasises the efficacy of symbols. The power arguments received a further elaboration from Swartz (2012) who pointed out that culture helps to establish and maintain social hierarchies as it mediates practices that institutionalise hierarchies.

Despite the availability of eloquent definitions and distinctive conceptions, such as those proposed by Kroeber and Kluckhohn, Geertz, Schneider, Turner, or Wolf, the elusiveness of culture remains and new definitions flourish. As a consensual definition is difficult to reach and there has been the call to narrow the conceptualisation, some scholars have suggested more summaries of distinct features of culture. Yet, differences appear in the existing summaries (Jahoda, 2012; Keesing, 1974; Sewell, 2005). Quite similar to but not as exhaustive as Kroeber and Kluckhohn's review, Keesing (1974) compiled a list of culture definitions and summarised it into two broader conceptions: culture as adaptive system and culture as ideational system. As adaptive system, culture serves to relate human communities to their ecological settings. Culture is behaviour patterns associated with certain groups

or populations that serve to adjust individuals and groups within their ecological environments. Central in the adaptive system is technology, subsistence economy, and elements of social organisation that directly influence the process of production. This means that adaptive changes occur as technology, subsistence economy, and elements of social organisation undergo changes.

As for culture as ideational system, it consists of three different notions: as a cognitive system, as a structural system, and as a symbolic system. As a cognitive system, culture is viewed as a system of knowledge. Culture comprises what an individual has to know or believe in order to operate in a manner acceptable to its group. In other words, it consists of standards for defining what is, what can be, what one feels about it, what to do about it, and how to go about doing it (Goodenough, 1961). As a structural system, culture is seen as shared symbolic worlds and as providing structures for mind to generate elaborations that result in culturally patterned order. Such patterned order eventually creates both organisation and boundary, which then separates one cultural group from other groups. As a symbolic system, the description is principally similar with Geertz's and Geertzian's (Ortner, 1984) description that culture is a system of shared symbols and meanings. On top of the grouping of the conceptions, Keesing asserted his view that culture is an ideational system that guides understanding and action in concrete social situations and ecological environments.

Sewell (2005) contended that the meanings of culture are twofold: first, culture as a theoretically defined category or aspect of social life which must be abstracted out from the multiplex reality of human life; second, culture as a concrete and bounded world of beliefs and practices. Sewell managed to summarise culture as a category of social life. As a category of social life, culture is conceptualised in a number of

different ways: as a learned behaviour, as an institutional sphere devoted to the making of meaning, as creativity or agency, as a system of symbols and meanings, and last but not least, as practice. Nevertheless, referring to culture as system and practice, Sewell posited culture as:

a dialectic of system and practice, as a dimension of social life autonomous from other such dimensions in its logic and its spatial configurations, and as a system of symbols possessing a real but thin coherence that is continually put at risk in practice and therefore subject to transformation. (p. 52)

By emphasising practice as embedded in culture and its association with the worlds of meaning, and that culture is subject to constant change, Sewell (2005) regarded it as irrelevant to divide society and culture as in the preceding debates between sociology and anthropology. Positioning culture in social practices apparently connects the study of culture to the sociological analysis of institutions (Swidler, 1995)

Swidler (2001) to a greater extent provided an elaboration on the conception of culture as practice. As Swidler argued it, the greatest achievement of Geertz was to conceive culture as a matter of publicly palpable symbols and meanings, so that the conception of culture as practice provides the understanding of culture as publicly observable symbolic and ritual practices that structure the possibilities of meaning in a given cultural system. Culture as practice not only links social practices and meanings, but also links culture to action. Elsewhere Swidler (1986) argued that culture comprises publicly available symbols, through which humans experiences and convey meanings, and practices such as language, gossip, stories, and rituals of day-to-day life. Culture plays not by setting out values nor interests toward which action is directed. Culture plays not by providing end-goals. Rather, it plays by forming a

repertoire or “tool kit” of habits, skills and styles that are utilised to develop strategies of action. Such strategies integrate, among others, views of the world. In this way then, the views of the world that in their own right contain symbols and symbolic meanings construct the strategies. Therefore, practices are organised action that in a way are constituted by symbols and meanings.

Jahoda (2012) attempted to examine definitions of culture that have existed in cross-cultural psychology literature, and as a result three notions of culture prevailed: as external, as internal, and as both external and internal. As external, culture is outside the person and not located in people’s minds and action (Schwartz, 2009). As internal, culture is common sense (Zou et al., 2009), made up of cultural syndromes (Triandis, 1996) and consists of learned routines of thinking, feeling, and interacting with other people (Hong, 2009). As internal and external, culture is part of the person and a set of conditions outside the person (Berry, Poortinga, Breugelmans, Chasiotis, & Sam, 2011). The summary asserted by Jahoda appears to be useful in providing a psychological account of culture’s conception. Yet, it summarises within the landscape of the study of culture that is dominant in psychology, cross-cultural psychology. Given, for example Keesing was an anthropologist, Jahoda was a psychologist, and Sewell was a historian, the aforementioned differences reveal not only how many definitions of culture exist, but also how different disciplines might have different focuses in conceptualising culture.

Despite the fact that Wilhelm Wundt, the founder of modern psychology, is famous because of his distinctive work on *Völkerpsychologie*, which popularly translated into English means cultural psychology – but according to Wong (2009) the closest correct translation is cultural-historical psychology – the concept of culture has come relatively recently to the forefront of conceptual debate in psychology. Konner

(2010) argued the concept of culture was discovered in psychology in the 1980s and 1990s despite its scholarship in psychology being traceable to as early as the 1920s and 1930s from the work of Lev Vygotsky. The concept of culture was left without critical examination in psychology because it tended to be taken as a given, as a packaged and unexamined variable (Whiting, 1976). When psychology is interested in searching for whatever ecological and sociocultural variables are associated with variations and regularities in human behaviour (Triandis, Malpass, & Davidson, 1973), there has been a prime belief that the struggle to conceptualise culture is unnecessary and irrelevant because culture is seen as a global and diffuse variable (Segall, 1984).

Moreover, as psychology is keen to establish generalised laws of human behaviour, psychologists are typically inclined to assume universalism of the regularities that they observe (Tharp, 2007). As a result of the inclination for universalism, on the one hand, there has been a tendency not to see culture as a challenge to universalism. On the other hand, contradictorily, to bring culture into the examination of human behaviour poses a pressing challenge to logical, empirical, and theoretical accounts of universalism. Within such beliefs and the enduring dominance of positivist thought in psychology, the dominant interest in psychology is to look at less abstract variables for establishing causality or laws of cause and effect of human behaviour. It is in the usage of the term “variable” that psychology not only sets its stance for positivism in psychological research, but also its preference to view culture not as a totality, but as an aggregated abstraction (Segall, 1984) and to reduce it to far more measurable behaviours (Betancourt & Lopez, 1993; Cooper & Denner, 1998; Misra & Gergen, 1993).

When psychology started to explain what culture was all about (see Jahoda, 2012), culture then became the focus for psychological examination as cross-cultural psychology emerged as a subfield in psychology (see Misra & Gergen, 1993). Early psychological definitions of culture arguably can be traced to the work of a pioneer in cross-cultural psychology, Harry Triandis, whose definition was greatly influenced by Herskovits's (1955) definition that regarded culture as the human-made part of the environment that consists of physical and subjective elements. Following that definition, Triandis (1972) distinguished objective culture – that includes concrete and observable elements, such as artefacts, institution, and social structures – and subjective culture – categorisations, evaluations, beliefs, attitudes, stereotypes, expectations, norms, ideals, roles, task definitions, and values. Psychology is unsurprisingly fond of exploring the subjective, internal element of culture.

Another early psychological definition of culture was put forward by Geert Hofstede in his groundbreaking book on cross-cultural differences entitled *Culture's consequences: International differences in work-related values*. Hofstede (1980) defines culture as the collective programming of the mind that distinguishes the members of one human group from another. Hofstede's study published in the book was massive, with data from about 88,000 IBM employees in 64 countries, and widely acclaimed because not only did it perform an exhaustive typical psychological study, but also identified four cultural value dimensions: power distance, individualism and collectivism, masculinity and femininity, and uncertainty avoidance. In this regard, Hofstede has managed to reify culture as a composite of research variables (Segall, 1986) or a summary label (Poortinga, van de Vijver, Joe, & van de Koppel, 1987) so it becomes measurable, which fits well with the positivist tradition. In addition, Hofstede has managed to provide a framework for psychology

to interpret culture, by ascribing binary categories in which individualism and collectivism have become the most popular constructs to designate culture (Kashima & Gelfand, 2012).

Another definition that is worth noting is one proposed by Rohner (1984). Rohner boldly pointed out that “little research within cross-cultural psychology has much to do with ‘culture’ per se” (p. 133). Further, he recalled the use of the term culture by cross-cultural psychologists as in a loose, generic sense, in an undifferentiated notion to a range of sociocultural forms designated as nation, society, tribe, or ethnic group. In line with his observations, he put forward a different assertion from Triandis and Hofstede. Rohner defined culture as “the totality of equivalent and complimentary learned meanings maintained by a human population, or by identifiable segments of a population, and transmitted from one generation to the next” (p. 120). By this definition, Rohner refers to culture as an abstraction, ideational, but more importantly referring to a system of meanings closed to Geertz’s and Geertzian’s conceptualisation of culture as symbol.

Yet, scholarship focused on the study of cultural variation in psychology has long been criticised for being too narrow, simplistic, ahistorical, and decontextualised (Cohen, 2009; Okazaki, David, & Abelmann, 2008). Against such a backdrop, recent writings (Cruz & Sonn, 2011; Gemignani & Peña, 2007; Jahoda, 2012; Tharp, 2007) have called for critical reflection and theorisation of culture in psychology. Among others, it is Cohen (2010), Cruz and Sonn (2011), and Kral et al. (2011) who see that community psychology can advantageously put forward a critical psychological concept of culture because not only has culture been a key organising construct in community psychology’s approach to social action, but also the field emphasises diversity and involves cultural matters more explicitly. Integrating culture in

community psychology research in itself offers a possibility to critically understand culture both as something within and as processes within any given contexts.

Since the inception of community psychology as a field, culture has been a focus of study (Cruz & Sonn, 2011; Kral et al., 2011). However, the integration of culture into its theory, research, and practice has not been robustly done (Kral et al., 2011). Cruz and Sonn (2011) noted there has been a tendency that culture in psychology, in general, is more understood as static social markers or as the background for understanding group differences. Culture is seen as something outside of individuals, something “out there”. Notwithstanding, as argued by Cruz and Sonn (2011), culture is inseparable from and inherent in who we are and what we do as social beings. Culture needs to be viewed as a historical product, a process, a means for social action.

Noting that community psychology, in many ways, is an institutionalised venture shaped by Western-world ways of being, knowing, and doing (Gridley & Breen, 2007), Cruz and Sonn (2011) and Okazaki and Saw (2011) believed that, in order to get to a critical notion of culture, it needs a critical step – that is ,becoming more decolonising by reflecting on our multiple positionings, including power within social/political/historical contexts. In so doing, consideration and examination of power becomes crucial, which can be achieved by deconstructing ideologies and discourses that obscure the workings of power (Martín-Baró, 1994).

In a similar tone, seeing it from a postmodern view, Gemignani and Peña (2007) define culture as an ongoing organisation of material and social constructions that, within place, time and history, is locally experienced and represented through processes of identification and relationship. Further, they posited that culture is not simply a theoretical conceptualisation, nor a stable or fixed entity, because it is

embedded in the daily life of every individual. A similar assertion was pointed out by Okazaki et al. (2008) as they argued that the theorisation of culture needs to be responsive to the fluidity and complexity of social lives. In sum, the critical notion of culture is historical, contextual, and committed to not “taken for granted” colonising approaches which appear in ways culture is conceptualised, e.g., being racialised and ethnicised (see Betancourt & Lopez, 1993; Phinney, 1996) or binary dichotomised, and studied.

In summary, the various conceptions of culture described above suggest the propensity of psychology to define culture – in comparison with anthropology and sociology – in terms of measurable behaviours to which categorisations, including binary categories, are ascribed. Ascribing categories, which are often dichotomised categories, potentially overlooks the notion of culture as something within, and as continuous processes within any given community context.

In viewing a disaster as something that occurs within the societal-environmental relations of a community (see Chapter 2), the present study views culture as lying within the continuing societal-environmental relations of a community. Culture develops and constantly changes in the continuing adaptational process of a community within its natural, social, and built environments. Culture is a system of symbols and meanings embedded in the daily life of individuals, by which individuals engage in social actions. Symbols and meanings link to social actions, which are adaptational and contextual to humans’ natural, social, and built environments because culture consists of practices. Such practices consolidate views of the world – contain symbols and meanings – and habits, skills and styles that are utilised to develop strategies of action. Taking everything into account, culture is a system of

symbols and meanings, and the practice of daily life that carries the adaptational strategies of a community.

Chapter 4

Research Methodology

This chapter presents the methodology employed in the present study. This chapter provides an explanation of the chosen qualitative methodology and grounded theory that guided data collection and data analysis. The rationale of choosing constructivist grounded theory is also presented. This is followed by the description of fieldwork carried out and data analysis processes set out by constructivist grounded theory. Taking into account the issue of quality or validity in a qualitative study, this chapter also presents the trustworthiness of the present study. The final section of this chapter presents the researcher's statement and researcher's reflexivity.

4.1 Qualitative methodology

The present study employed a qualitative methodology to emphasise the importance of meaning embedded in culture and in the experience of being permanently relocated in the aftermath of the eruption. A qualitative methodology was chosen because it enables a researcher to thoroughly make sense, interpret, or grasp meanings people bring to phenomena or events they experience (see Denzin & Lincoln, 2000; Willig, 2008). Moreover, as stated by Willig (2008), a qualitative methodology enables the researcher to understand 'what is it like' to experience particular conditions (e.g., being permanently relocated) and how people manage certain situations (e.g., how people managed changes following relocation). As such a qualitative methodology is fit for research aimed at producing descriptions and explanations of subjective experience (Auerbach & Silverstein, 2003; Willig, 2008) of

being permanently relocated. It can foster a greater understanding of subjective experience and the meaning attributed to experience as it allows a greater comprehension of an issue from research participants' contexts and perspectives.

Charmaz (2004) affirmed that qualitative methodology allows a researcher not only to describe a phenomenon from the outside, but also to “enter the phenomenon to discover what is significant from the viewpoints and actions of people who experience it” (p. 981). It enables a researcher to make an interpretive rendering from the inside, which can be achieved by being fully present during the interview and deeply immersed in the data collected. A qualitative methodology enables meanings that are often covert, unstated, and implicit to be unpacked (Charmaz, 2004). Meanings are developed through interaction with others and through historical and cultural norms that are operative in people's lives (Creswell, 2007). Meanings shape actions, and vice versa, actions can make meanings that are too often unstated become visible. A qualitative methodology can provide a lens to analyse the interrelationship between meanings and actions (Charmaz, 2004).

Furthermore, the present study was guided by the statement of problems set out in Chapter 1 to make the inquiry “what are the community psychological consequences of permanent relocation” and “how does culture have an impact on community recovery” for relocated communities. Therefore, the present study was bound by two sets of questions: the ‘what question’ and the ‘how question’ (Bess et al., 2002) that in essence pose questions about processes (Willig, 2008). The present study sets forth to describe and explain a process of change, not to predict it. So, a qualitative methodology was chosen because it can produce a description and explanation of how culture shaped experiences and meanings as people underwent a difficult process of change (Willig, 2008).

The present study is firstly descriptive in its purpose (Salkind, 2010) as an attempt to describe experiences of relocated communities in relation to how culture plays a role in the process of developing sense of community and how culture and sense of community have an impact on community recovery post-natural disaster. A qualitative methodology offers a suitable platform to understand experiences of relocated communities, meanings attributed to experiences, and meanings related to culture as it operates in people's lives. By using a qualitative methodology, the experience of being relocated in the context of recovery can be critically understood. Moreover, the adoption of a qualitative methodology for disaster research proves to be critical because of the distinctiveness of the disaster context (Phillips, 2014). As Phillips (2014) asserted it, a disaster context represents the lived experiences in dynamic social settings, a location where the human condition is at a most sincere level of performance, and social problems along with resilience are found in social networks and social structures. In addition, a qualitative methodology can "give voice" (Willig, 2008) to people whose power has been weakened because of the difficulties posed by disaster and primarily by relocation, and who were relatively in a weaker position compared to those who have brought in aid.

In summary, the present study employed a qualitative methodology in consideration of the experience of being permanently relocated, the meanings attributed to that experience and shaped by culture, the process of change that followed the disaster and relocation, and the distinctive contexts of disaster and post-disaster.

4.2 Grounded Theory as a design framework

The focus on experience, meaning, process, and context guide the present study to its epistemological stance and chosen design framework. The present study adopted a constructivism stance, particularly social constructionism (Schwandt, 2007), which focuses more on social process and interaction. The basic tenet of this stance is that human beings do not find or discover knowledge so much as we construct it (Schwandt, 2000). The construction is inevitably historical and sociocultural, where human beings continuously test and modify the construction in the light of new experience. Moreover, this stance recognises the presence of multiple social realities, acknowledges shared construction of knowledge by a researcher and research subject, and strives for interpretive understanding of subjects' meanings (Charmaz, 2000).

The present study adopted the grounded theory approach that was originally developed by Glaser and Strauss (1967). As Phillips (2014) affirmed, qualitative disaster research evolves during the data collection and analysis process. This implies that qualitative inquiry in the context of disaster is open to an emergent process. Therefore, grounded theory was chosen because it allows a researcher to simultaneously be involved in data collection and analysis (Glaser & Strauss, 1967), which makes it fit for investigating the process of change that has occurred in the context of relocated communities.

The present study employed grounded theory as a design framework. As a design framework, it consists of a systematic, inductive, and comparative approach for conducting inquiry for the purpose of constructing theory (Bryant & Charmaz, 2007; Charmaz, 2006). It encourages and requires a researcher to persistently interact with data since data collection and data analysis are undertaken concurrently. It allows analytic interpretations of data to focus further data collection that is used in turn to

inform and fine-tune developing theoretical analysis (Charmaz, 2000). The analytic process with data guides data collection and analysis, becoming more focused and theoretical. It is worth noting that the term grounded theory in this chapter refers to a design framework.

Since innovatively conceived by Barney G. Glaser and Anselm L. Strauss (1967) grounded theory has developed further. There is a notable split in grounded theory that resulted in two significant strands: objectivist and constructivist grounded theory (see Bryant & Charmaz, 2007; Charmaz, 2000, 2006). The difference between the two strands and grounded theory itself is best understood historically (Suddaby, 2006). Therefore, it is worth briefly describing the historical development of grounded theory.

Grounded theory was developed and introduced by Glaser and Strauss (1967) in their seminal book *The discovery of Grounded Theory: Strategies of qualitative research*. In its original and earliest definition, grounded theory is defined as “the discovery of theory from data systematically obtained from social research” (Glaser & Strauss, 1967, p. 2). Glaser, who was trained in quantitative research at Columbia University, and Strauss, who was trained in qualitative research at the University of Chicago, pointed out the use of grounded theory is to generate a theory, not to verify nor modify a theory (Glaser & Strauss, 1967). A theory is generated in the use of grounded theory through its distinctive strategy of comparative analysis. By using the strategy of comparative analysis, a theory can be discovered in data. Moreover, according to Glaser and Strauss (1967) the invention of grounded theory aimed to contend with views that qualitative research could not generate theory because qualitative research was impressionistic and unsystematic, and views that position qualitative research as merely a precursor to more robust quantitative research.

Despite being devised as a challenge to a dominant positivism-quantitative research paradigm, Glaser and Strauss' (1967) grounded theory remains inclined towards a positivism stance with its objectivist underpinnings (see Bryant & Charmaz, 2007; Charmaz, 2006). It remains imbued with positivism because of its view that the truthfulness of a theory can be determined merely by recourse to the data (Bryant & Charmaz, 2007). A theory is in the data that waits to be discovered by one who focuses on data.

Glaser and Strauss each went in divergent directions but still they adhered to a positivism stance (Charmaz, 2006). Glaser (1992) remained consistent with assumptions of an objective, external reality, and the researcher as a neutral observer who discovers theory in data (Charmaz, 2000). Strauss teamed up with Juliet Corbin and maintained the view that the function of grounded theory is to discover a theory in data (Strauss & Corbin, 1998). Data speaks for itself and a researcher is able to keep a distance from the data in order to make an objective discovery. Strauss and Corbin (1998) proposed a set of technical procedures (e.g., insertion of a conditional matrix, and axial coding) aimed toward unbiased data collection and analysis; or in other words, to minimise the intrusion of the subjectivity of the researcher. Moreover, Strauss and Corbin (1998) affirmed the use of grounded theory for verification.

In opposition to the idea of an emergent theory from data, which makes researchers' expert knowledge supersede that of their research subjects (Bryant & Charmaz, 2007), constructivist grounded theory holds a view that researchers and research subjects co-construct both data and theory. The construction of theory is always entangled with researchers' paradigms, perspectives, values, beliefs, and experiences. Equally important, both research subjects and their contexts where the research is undertaken influence the construction of theory. According to

constructivist grounded theory, data themselves do not provide a window on reality or theory. Rather, a discovered reality or theory stems from the interactive process and its temporal, structural, and cultural contexts (Charmaz, 2000). It is researchers and their subjects who frame the interaction and confer meaning upon it.

In the present study, a grounded theory related to the process of change imposed by relocation was essentially co-constructed by the researcher and members of the community who directly or indirectly participated in the study. The co-construction of theory was guided by two sets of questions: “what are the community psychological consequences of relocation?” and “how does culture have an impact on community recovery?” The “what” question in the present study drew on the participants’ descriptions about what occurred and what they experienced, as people permanently relocated. The “how” question drew on the participants’ explanations of how cultural meanings and practices they were familiar with became fundamental to judging their experience with relocation. As put forward by Willig (2008), the combination of “what question” and “how question” brought to light a process. As expected, the two key questions of the present study primarily drew on the process of change that the community endured as the community permanently relocated. By explicating data about that process of change and through the interpretive theorising (Charmaz, 2006) that followed it, a grounded theory of the enduring role of culture in community recovery post-disaster was eventually constructed (or co-constructed).

In contrast to objectivist grounded theory’s prescriptive formulaic technique to data (Suddaby, 2006), constructivist grounded theory emphasises a set of principles, guidelines, and practices that are flexible, not strict methodological rules, recipes, and requirements (Charmaz, 2006). Also, it emphasises that conceptual categories, which a theory is based upon, come to light through researchers’ interpretations of data

rather than simply emanate from data (Charmaz, 2013). Hence, theoretical analysis in constructivist grounded theory is interpretive renderings of a reality, not objective reportings of it.

4.3 Rationale for choosing constructivist grounded theory

Being consistent with the social constructionism stance, the present study chose to employ constructivist grounded theory as put forward by Charmaz (2006). Constructivist grounded theory was chosen as the design framework that guided the research process for a number of substantial reasons. First, as Charmaz (2000, 2006, 2008) pointed it out, it focuses on meaning, views action as a central emphasis, and sees action as arising within socially created situations and social structures. In this regard, it is worth mentioning its compatibility with Blumer's (1969) premises of symbolic interactionism: human beings act toward things on the basis of the meanings that the things have for them, the meaning is derived from their social interaction with others, and meanings are handled in and modified through an interpretative process. Second, constructivist grounded theory assumes the existence of multiple social realities – which is consistent with community psychology's concerns in context, diversity, and ecological framework (Kral et al., 2011). Third, it attends to what and how questions to emphasise an abstract understanding of empirical phenomena located in social processes in context (Milliken & Schreiber, 2012). Fourth, it entails a relationship with research subjects in which they can share their stories in their terms. Fifth, last but not least, it is not in the intention of the present study to objectify the phenomenon for discovering a theory, for generating an entirely new theory. Rather, the present study aimed to understand the subjective experience of/ the phenomenon

for generating a new perspective. Therefore, it is for generating interpretations that spark new views and lead others to new vistas (Charmaz, 2006).

4.4 Participants

In grounded theory, participants are those who are fit for initial sampling and theoretical sampling. Unlike sampling in conventional quantitative research, the aim of sampling in grounded theory is not simply to reflect population distributions or to get to the point where no new data emerge (Charmaz, 2006). Sampling in grounded theory is sampling for constructing theoretical categories. The construction of theoretical categories ultimately requires theoretical sampling, rather than representative sampling. In grounded theory, initial sampling is a departure point. It is where a researcher starts. Theoretical sampling gives directions for where to go. It is sampling that provides theoretical elaboration and refinement as data collection and data analysis go forward simultaneously.

In the present study, initial sampling was determined before the fieldwork started. The criteria established for initial sampling was straightforward: adults who lived in the relocation site. In addition, working toward understanding the process that involved government and non-governmental organisations from the emergency to the rehabilitation and reconstruction period, initial sampling was set to include representatives from government and non-governmental organisations that engaged in different stages of post-disaster responses.

In reference to the strategy of constant comparison and being flexible in the field context, theoretical sampling included participants from different segments of relocated communities in terms of age group (youth, adult, elder), gender (male, female), and position (general individual, youth leader, community activist, head of

subvillage, head of village). Also, theoretical sampling included participants from two different relocation sites, two different relocation types (collective relocation, independent relocation), and those who decided to return to the village of origin.

All information from participants both in initial sampling and theoretical sampling were of importance to get to arisen conceptual categories. The total recruited participants consisted of thirty-eight people from relocated communities (fourteen female and twenty-four male) and six people from government and non-governmental organisations (three from government and three from non-government organisations).

4.5 Fieldwork

The fieldwork was conducted from mid-November 2013 to end of February 2014. In the beginning of the fieldwork, the researcher established contact with a disaster management centre of a university in Yogyakarta, Indonesia that once ran a program in some villages on the slopes of Merapi prior to the 2010 eruption and were also involved in the post-eruption response. The contact aimed to get initial information about relocation sites and seek assistance from local resources to have access to a relocation site or relocated community.

Before started going to the relocation site, the researcher decided to get familiarised with the life of the community on the slopes of Merapi, especially the community that was not directly affected by the 2010 eruption. In this way, the researcher could also get first-hand information about the community in Merapi in general. In this regard, the researcher could have information to compare between relocated communities and non-relocated communities. Through a staff of the aforementioned disaster management centre who was a resident in the Merapi area,

the researcher had access to spend time in a village that was back to normal life after being severely affected by the eruption in 1994.

After the familiarisation phase, the researcher started reaching out to the community in the relocation site. Through a staff of the aforementioned disaster management centre, the researcher got connected to a community relocated in the biggest relocation site. The first contact and the first crucial connection happened when the researcher was introduced to a community activist of the relocated community. Ever since the first meet-up the rapport was established. Not long after the first meet-up, the fieldwork entered a pivotal phase when that community activist accepted the researcher to live in his house.

In the first days of living in the relocation site, the researcher aimed to build rapport and relationship with the community that included being introduced to the head of sub-village and the head of village. Most of the time the researcher conducted natural observation and engaged in daily interactions with the community included attending community events (e.g., ritual feasts, funerals). In this regard, the researcher to an extent practiced hanging out (see Woodward, 2008), a networking process in conjunction with being 'inside' and being 'outside' in the process of conducting research and producing knowledge.

The first formal interview, where informed consent was given to a participant and the interview was audio taped was with a youth leader after more than a week of the researcher staying in the relocation site. Most of the interviews were conducted after more than a month of the researcher staying in the relocation site. In this way, the researcher wanted to make good rapport and smooth interactions with the community before conducting the interviews. Following the logic of theoretical sampling, the researcher reached out to participants from another relocation site with the help of

previously interviewed participants or several individuals from the relocation site where the researcher stayed.

The data in this research were obtained from twenty individual interviews and four focus groups (two in each relocation site with one focus group with men and one focus group with women respectively). All the interviews and focus groups were conducted in participants' houses.

4.6 Data collection and data analysis

As stated earlier, in grounded theory, data collection and data analysis are conducted simultaneously. In this research, data collection started when the researcher went to the disaster management centre of a university in Yogyakarta. Data collection began when the researcher had quite a lengthy conversation with a centre staff member – different from the one who took the researcher to become familiar with a village in Merapi – about his childhood experience of spending every school holiday in his grandparent's house in a village on the slopes of Merapi. From the conversation, the researcher started taking notes of what in the past people living in Merapi typically did (e.g., kept some of crops in the kitchen area as the heat from traditional stoves/wood fire prevented them from being decayed). In line with Glaser and Strauss (1967), by the time that conversation began, data analysis started and yielded early evidence that would be elaborated and refined through the next step of data collection and data analysis in the course of the fieldwork.

Further data collection was conducted when the researcher familiarised himself with the life of community in Merapi by spending time in a village in Merapi that was not directly affected by the 2010 eruption but was severely affected by the 1994 eruption. Data collection and the data analysis process went on as the researcher went

to the relocation site and stayed with a local family there. A protocol was used (see Appendix 6) to guide interviews and focus groups. Interviews and focus groups started with a question to interviewees and focus groups participants about what they were doing when Merapi erupted in 2010. The subsequent questions included questions about experiences with previous eruptions, experiences during the periods of displacement (from evacuation during the emergency phase to permanent relocation), and how the community went about its life before and after the permanent relocation. A probe into changes and challenges that the community faced as a result of permanent relocation was key in interviews and focus groups conducted.

Interviews and focus groups were conducted in the Indonesian language combined with the local language of Javanese. Data were in the forms of audio taped interviews from both individual interviews and focus groups that were transcribed verbatim, notes extracted from casual conversations in daily interactions and the ‘hanging out’ process, and notes from day-to-day natural observation. All data from interviews and focus groups, which were originally in the Indonesian language, were transcribed verbatim in the Indonesian language and then translated into English by a language translation agent.

Moving along with theoretical sampling, data was explicated, starting from coding to conceptual categories and eventually to more analytic themes. The researcher conducted data coding manually. Initially, the researcher conducted coding of the translated transcripts. However, during the process of coding the researcher felt detached from the data and felt it was difficult to get immersed in the data. So, the researcher decided to conduct coding of the non-translated transcripts.

The final themes were generated from a final process that included diagramming categories and discussion with the researcher’s supervisors about both

emerging patterns and contradictions. The final themes represented links among categories that were explicated through elaboration and refinement of categories in the entire process of data collection and analysis. The themes were subsequently integrated into the stated grounded theory, “the enduring role of culture in community recovery post-disaster”, through the process essentially embedded in the constructivist grounded theory approach: interpretive theorising (Charmaz, 2006). In the process of interpretive theorising, the themes were interrogated with the aim of understanding – in contrast to explaining or predicting – the studied phenomenon. In this way, the interrogation involved the process of establishing links between themes, asking question about the links, and building on ideas. All of these were involved a series of discussions with the researcher’s supervisors about the interconnection between themes. Table 1 presents the preliminary and final analytic themes.

Table 1 Development of analytic themes

| Preliminary analytic themes | Examples of conceptual categories | Final analytic themes |
|---|---|---|
| Living closely with the volcano | Living in harmony with the volcano Believing the superstitions | Embracing the volcano for living one’s life |
| Drawing connections between house, land, and the future | Un-separating meanings of house and land Comparing the new place and the old place | Losing an integrated lived space, losing the meaning of place |
| Introducing unfamiliarity | Creating newness Blaming outsiders | Benefits and disadvantages of aid |
| Facilitating connectedness | Missing ‘ <i>gotong royong</i> ’ Getting in touch with old generation | Centring ‘ <i>gotong royong</i> ’ as a key for community recovery |

4.7 Ethical considerations

Taking into consideration that the research process involved human participants who experienced difficulties caused by the disaster and the relocation that followed, ethics approval was sought from Victoria University's Research Ethics Committee. Ethics approval was required to ensure the research process maintained participants' physical and psychological integrity and no harm was inflicted on any participants. The present study gained ethics approval before the fieldwork started.

4.8 Trustworthiness

As a general rule, trustworthiness is a standard for defining the "goodness" (Morrow, 2005) or the "quality" (Rolfe, 2006) of qualitative research. Trustworthiness is a set of criteria by which the quality of a qualitative research study and its findings are noteworthy to audiences (Schwandt, 2007). The widely accepted criteria for trustworthiness (see Guba, 1981; Lincoln & Guba, 1985; Schwandt, 2007) include (1) credibility, which addresses the issue of the researcher providing assurances of the fit between subjects' views of their life ways and the researcher's reconstruction and representation of same, (2) transferability, which addresses the issue of generalisability in the form of the researcher's responsibility for providing audiences with sufficient information on the case studied including its context (3) dependability, which addresses the process of research and the researcher's responsibility for ensuring the process is logical, traceable, and documented, and (4) confirmability, which addresses the issue of neutrality in which the researcher ensures that the data and interpretations are not merely fabrications of the researcher's imagination.

Qualitative research consists of a variety of design frameworks and every design has its own underpinning paradigm and epistemological stance. Therefore, the

trustworthiness or ‘goodness’ or quality of a qualitative research study is examined based upon its underpinning paradigm and epistemological stance (Morrow, 2005). The criterion of confirmability appears to be difficult to meet for research ensued from a constructivist or social constructionism stance in which a researcher cannot be purely neutral and unaffected by researchers’ paradigms, perspectives, values, beliefs, and experiences as well as research interactions with subjects.

Trustworthiness of the present study, then, follows specifically criteria for grounded theory put forward by Charmaz (2006) that include credibility, originality, resonance, and usefulness. Of four criteria, credibility and originality are central because a positive combination of the two enhances resonance, usefulness, and eventually contribution to the value of grounded theory (Charmaz, 2006). The present study aimed to achieve credibility as the researcher placed emphasis on achieving intimate familiarity with the setting or topic at the beginning of the fieldwork. The obtained data was sufficient with regard to its span of community segment and number, the depth of observation component in the data, and that it covered information from relevant government and non-governmental organisations. The elaboration was made through the comparison between observation and emergent categories. Moreover, the analysis and resultant analytical themes provided adequate evidence about experience, meanings, process of change, and interaction in the context of relocated communities.

As for its originality, although the researcher realises the claim of the freshness of categories cannot be made to the fullest extent – because of the availability of other social scientific studies about people living in Merapi – the researcher is confident enough that they offered new insights about the experience of being relocated, the process of change, and sociocultural accounts (that included sense of community and

social capital) of community recovery. As such, in this regard the use of constructivist grounded theory extends both theories of sense of community and the cultural dimension of community recovery, and practices of community-based and culture-sensitive recovery programming post-disaster.

4.9 Researcher's reflexivity

The inclusion of reflexivity in the course of qualitative research is of importance (Mauthner & Doucet, 2003; Willig, 2008) because of the interpretive nature of qualitative data analysis. Reflexivity shows the researcher's reflection upon the ways the researcher's experiences, values, interests, beliefs, political commitments, identities (Willig, 2008), and opinions (Wilson, 2012) shape data collection and analysis. Also, reflexivity reflects the stance of the researcher who is aware of the researcher's contribution to the construction of meanings in the course of the research because meanings are made, not simply found (Mauthner & Doucet, 2003).

Reflexivity indicates not only self-reflection on the researcher's potential biases and theoretical inclinations, but also the researcher's awareness that the researcher is inherent in the setting and context that the researcher seeks to understand (Schwandt, 2007). Reflexivity, together with triangulation, ensures the attainment of confirmability (Guba, 1981; Tobin & Begley, 2004). All in all, reflexivity contributes to the rigor of the constructivist approach to grounded theory (Charmaz, 1990; Hall & Callery, 2001) and constitutes an integral part of the research report (Willig, 2008).

The researcher has quite extensive experience in post-disaster response in his country, Indonesia. In the early 2000s, as a fresh graduate, he began to get an exposure to humanitarian crisis situations. As a volunteer, he began to work with internally displaced people who fled from areas shaken by violent communal conflict

in different parts of Indonesia. He was very enthusiastic as he thought psychology, which he had studied at his country's number one university, would give him an effective tool. Yet, he was quite naïve. What he knew was what he knew from his study. He believed a clinical psychology approach was what needed. At the same time he saw an influx of expertise from outside the country bringing in the same clinical psychology approach. He saw some of his former lecturers learned it from foreign experts (or consultants) and worked together providing assistance to the affected people. Nothing was wrong as he saw it. Indeed, it was novel and cool. Trauma healing, trauma counselling was a novel practice and technique to the best of his knowledge at the time.

Then, he pursued a Master's degree in humanitarian assistance. And that was an eye opening moment. He started to understand some of the downsides in the field that is meant to be, supposed to be, truly humanitarian. He was in his home country writing his Master's thesis when the 2004 Indian Ocean tsunami devastated Aceh. He stopped his thesis writing as he volunteered to work with wounded people transferred to hospitals in Jakarta. Long story short, he managed to graduate and three months after the 2004 Indian Ocean tsunami he landed in Aceh and became one of thousands of people who worked for post-tsunami recovery.

He had a 'new' mind-set by the time he arrived at Aceh. He no longer held in his mind that trauma healing and the clinical approach were everything that psychology could do for survivors of disaster. Also, he no longer held in his mind that the reliance on international assistance, including its experts, would solve all the breakdowns in the humanitarian crisis. For a full one year in Aceh he saw the influx of assistance was much greater than what he saw a few years before. It was massive and even unprecedented. He saw some highs. He also saw some lows, even very lows. Some

times he felt he was being forced by circumstances to compete with it during one year living and working in Aceh. On top of everything else, one of the major takeaways from his experience in Aceh was that the social psychology approach to post-disaster recovery was too often insufficient. More than anything, he started seeing a hope in a community psychology approach to post-disaster, which unfortunately was much less implemented than any other psychological approach.

Ever since, especially after he was appointed as director of the Crisis Center in his university in 2008, he set foot in every area struck by major disaster in his country, including the eruption of Merapi in 2010. He expanded his experience; so too he developed his perspective. All of his experiences, perspectives, and reflections influenced his decision to pursue doctorate study at Victoria University, to choose the topic for his PhD, and eventually his research course. He was fully aware that his decision to choose qualitative research (despite being shaky in the beginning as he was trained more in quantitative research), qualitative methodology, and constructivist grounded theory would not give him the objectivity or neutrality desired to the utmost term. Instead, he was fully aware his decision was for celebrating subjectivity in human experience and giving voice: to his research subjects and himself in a scientifically acceptable manner.

Chapter 5

Results

5.1 Introduction to study context

To contextualise and situate the experience of the informants in this study, this section aims to provide a description of socioeconomic and cultural contexts of the community where this study was conducted. The socioeconomic and cultural contexts of the community are important to be situated in the historical account of the area and the local beliefs about Merapi. Therefore, this section also presents key historical narratives and local beliefs about Merapi. Taken together, the description of socioeconomic contexts and key historical narratives and local beliefs about Merapi set forth background information about the community and the informants in this study. Equally important, they are important to understand the data at the core of this thesis. It is worth noting that the descriptions are compiled from existing references and information gathered through observation and interaction with the community during the fieldwork.

Merapi volcano (2968 meters high) is not only one of the most dangerous volcanoes in Indonesia, but also one of the most active volcanoes in the world (Surono et al., 2012). In reported history, it has erupted nearly 80 times since 1548 (Voight, Constantine, Siswamidjyo, & Torley, 2000). The deadliest eruption occurred in 1672, which killed 3000 people. A Dutch geologist, Reinout Willem van Bemmelen claimed that Merapi erupted in 1006, which caused the devastation of the kingdom of Hindu Mataram and forced the kingdom to relocate from Central Java to East Java (Triyoga, 2010). Over the last two centuries, it has had a cycle of eruptions

every 8-15 years (Thouret et al., 2000) with more than 23 eruptions occurring in the last 100 years (Voight et al., 2000).

Despite its frequent eruptive episodes, the slopes of Merapi have always been densely inhabited. The population density in the slopes of Merapi is considered high, with 935-1901 inhabitants/km² (Indonesian Central Agency of Statistics, 2008). In 2010 the Indonesian Central Agency of Statistics recorded 226,000 living in 57 villages in dangerous zones, with more than 50,000 people lived in the “danger zone III”, or the most dangerous zone classified by the Indonesian Centre of Volcanology and Geological Hazard Mitigation. In addition, Thouret et al. (2000) reported the population rapidly grew over 3% annually from 1976 to 1995 in the “danger zone III”, which exceeded the growth rate of the national population in the same time interval. Mei et al. (2013) noted the increase of population in the slopes of Merapi was mostly caused by environmental factors (e.g., soil fertility and water supply) and socioeconomic factors (e.g., construction of roads, electricity, telecommunication, and fresh water infrastructures and development of tourist sites).

Merapi volcano is located in two provinces: Central Java and the special region of Yogyakarta. It is located 30 km north of the centre of Yogyakarta city, where *keraton* (court) or the palace of the king of Yogyakarta Kingdom exists. Historically, Merapi is located within the territory of the Yogyakarta Kingdom, a kingdom that predates Indonesia and remained in existence after Indonesia was founded. The king of Yogyakarta Kingdom, called the *Sultan*, is the only king who holds civil authority over a province in Indonesia. *Sultan* is governor of the special region of Yogyakarta province.

The significance of Merapi volcano lies not merely in the fact it is coined as a killer volcano (Gertisser et al., 2011), but more importantly in its place in the Javanese

worldview (see Dove, 2010; Schlehe, 1996). Its significance in the Javanese worldview is inextricably linked to the presence of the Yogyakarta Kingdom, which is considered as the court of civilisation of the Javanese (Koentjaraningrat, 1985). It is of the greatest importance to the Yogyakarta Kingdom that situates Merapi volcano at the centre of the Javanese worldview. The history of the Yogyakarta Kingdom is key to understanding the significance of both Merapi and the Yogyakarta Kingdom. The Yogyakarta Kingdom is the successor of the Mataram Kingdom, whose greatest ruler, *Sultan Agung* (Ricklefs, 1998) commenced the acquisition of the *Sultan* title (Ras, 1987) and created the new Javanese calendar. The creation of the new Javanese calendar by *Sultan Agung* established the significance of the Kingdom over the Javanese culture and tradition.

The significance of Merapi volcano also comes from the belief about a mystical interrelationships between the Yogyakarta Kingdom, Merapi volcano, and the Java South Sea. It is widely believed that the court of Yogyakarta Kingdom is located equidistant from and on a direct line between Merapi volcano and the Java South Sea (Dove, 2010; Schlehe, 1996). Furthermore, it is believed that there are courts of spirits in Merapi volcano and the Java South Sea. The court of Yogyakarta Kingdom is believed to have a special connection with both the courts of Merapi and Java South Sea and to hold spiritual power over the union of the spirits of Merapi volcano and the Java South Sea (Dove, 2010).

The interconnection between the three courts is believed to have begun when *Panembahan Senopati*, the founder of the Mataram Kingdom, established relations with the ruler of Merapi (*Kyai Sapujagad*) and the ruler of the Java South Sea (*Ratu Kidul* or the Queen of the South) before he seized power and came to the throne as the first king of the Mataram Kingdom in the sixteenth century. Moreover, it is believed

that *Panembahan Senopati* made a pilgrimage journey to the Java South Sea where he met *Ratu Kidul* and since then built a mystical love relationship with *Ratu Kidul*. The love relationship is believed to have become an eternal one not only with him, but also with his successors, the rulers of the Mataram Kingdom. The relations between the rulers of the three courts remained when *Panembahan Senopati* was deceased and the Mataram Kingdom was transformed into the Yogyakarta Kingdom.

The Javanese worldview considers there is a correspondence between the macrocosm and the microcosm for achieving the ultimate goal of the existence of human beings to form a perfect union of human beings and their creator (Dove, 2010). The macrocosm of the otherworldly universe is interconnected with the microcosm of the mundane world of individual, society, and nature. This interconnection requires them to remain in a state of amicable equilibrium. It requires that humans respect and get along well with each other, nature, and the otherworldly universe to keep the cosmos in harmony. As such, in the mundane human society, human life and natural occurrences are seen as being inseparably connected, too (Schlehe, 1996).

The Javanese worldview acknowledges Merapi volcano as the most sacred place (Kato, 2012). It is within the Javanese worldview that it is believed there is a world inside the crater of Merapi, which is a parallel, replica or miniature of Javanese living (Dove, 2010). Within the Javanese worldview it is also believed that spirits within Merapi volcano have their own palace, to which human beings will be called through death when there is a need for labour. This resembles the everyday life of the Javanese by which a Javanese ruler will call upon its people when works need to be done. People also believe there is a structure and organisation within the Merapi palace that comprises rulers, soldiers, and servants. Those who live inside the Merapi

palace are believed to be the spirits of good people, whereas bad people's spirits stay outside the palace.

Descended from what *Panembahan Senopati* did to maintain a good relationship with Merapi volcano, the court of Yogyakarta Kingdom conducts the *labuhan* ceremony, a special offering that is held every year on the day of *Sultan's* accession to the throne – the 25th day of the fourth month (*Bakdamulud*) of the Javanese calendar. For maintaining the spiritual relation with Merapi volcano, *Sultan* appoints a *juru kunci* (key master – translated). *Juru kunci* is a person, a male who lives in a village in Merapi who acts as a representative of the court of Yogyakarta Kingdom to liaise with Merapi. His duty is to conduct ceremonies related to Merapi volcano, including the *labuhan* ceremony. A *juru kunci* is consequently regarded as being knowledgeable about the world of spirits in Merapi volcano and able to communicate with it (Mei & Lavigne, 2012). The late *Mbah Marijan* was a well-known *juru kunci* who died in the event of the 2010 eruption. He somehow got mixed cognisance; recognition of being devoted ultimately to Merapi as well as notoriety for deciding to stay in his village of Kinahrejo despite the authorities urging people to promptly evacuate (Mei et al., 2013).

The Javanese worldview accounts the first month of the Islamic calendar (*Muharram*, or *Suro* in the Javanese term) as the appropriate time for Javanese to clean up themselves and their surroundings and to pay a visit to sacred places. It is believed that in *Muharram* or *Suro* the house building and cleaning is scheduled to happen in the Merapi palace. Therefore, the waste is produced and manifested in ejected materials, including hot gas clouds (Triyoga, 2010). In addition, it is believed that in *Muharram* or *Suro* the spirits of Merapi pay a visit to the Java South Sea. Merapi has thirteen rivers where lava, hot gas clouds, and lahar usually travel down

from the summit following the courses of the rivers. Accordingly, the rivers are thought to be the ways for the spirits to take a trip to and from the Java South Sea during heavy rains with wind storms (Triyoga, 2010).

When people started to inhabit the slopes of Merapi is still unknown. However, the history of the beginnings of villages in Merapi is mostly linked to political turmoil in old Javanese kingdoms in the end of the fifteenth century, where some of the figures fled to or hid in the forest in Merapi, or to noble people (*priyayi*) who decided to meditate and live as ascetics on the slopes of Merapi with their followers until their deaths (Triyoga, 2010).

People who inhabit the slopes of Merapi typically chose to build their houses in flat areas of land (Triyoga, 2010). There are rituals when they open and clear the land as well as when they build houses. The rituals aim at moving away the bad spirits or, in other words, aimed at living peacefully with Merapi. They usually build their houses using materials locally found, such as from wood or bamboo trees that they plant and from sand and rocks available in the aftermath of eruption. Typically the houses face village's main road and never face Merapi. People believe their houses should not face Merapi and by doing so this will bring wellbeing and safety.

The majority of villagers in Merapi are farmers, be it crop farmers or livestock farmers. Up to the early of twentieth century, they practised swidden farming and attended their cattle within the forest (Dove, 2006). After the Dutch colonial government declared the protected forest area of Merapi in 1912 (Triyoga, 2010), swidden farming was forbidden: they then started permanent farming (Dove, 2006). From the fieldwork of the present study, it was evident that most of them do both crop farming and livestock farming because not only they can get more return, but also they use fertiliser that is produced from the manure of their own cattle.

In general, the land owned by households in villages in Merapi is larger than in the lower land. On average, every household in Merapi owns a hectare of land (Triyoga, 2010). It usually consists of a house, yard, and farmland. Houses typically are spacious and families usually have prepared a space within their land, where they can build an extended or new house for their children as they get married.

Within yards they typically grow smaller plants such as vegetables, tubers, and fruits that can be consumed or sold on a daily basis to the nearest market. Also within yards cattle are caged and grown. Cattle are mostly fed with grasses cultivated or growing naturally in between the plants in the farmland. Sometimes people also get grasses from the forest or the grasslands higher on the flanks of Merapi. Families get income from their cattle by selling the cattle's milk. Cattle are regarded as a means of 'banking' surplus resources for families at the time they are mostly needed (Dove, 2006)

The main farmland is commonly located outside the house compound. It is customarily located on the border between the village and the forest on the flank of the volcano. In farmland, families usually grow corn, coffee, silk tree or white albizia, and other bigger trees. The plants grown in farmland are more long-term ones. The crops from the plants grown in farmland are considered more as savings or future investment for the family (e.g., a source of funds for children's education). Big trees from farmlands are usually not only to be traded for cash, but also to be used when people need them for renovating the house or building a new house for their children or grandchildren.

In general, all family members are involved in all the farming activity. Very early in the morning, either men or women start their activities by milking cows. Typically, after finishing domestic works (e.g., cooking, getting the kids ready), women gather

grasses at the same time as men work in yards or farmlands. Sometimes women help men to attend plants they grow in yards before they go out to gather grasses. Once women finish gathering grasses, either they carry the grasses themselves to home or leave the grasses somewhere until men pick up the grasses. Sometimes men also gather grasses, while women work with cattle or plants in yards.

People gather grasses not only in their farmlands or within the village, but also in the forest or in higher flanks, especially during the dry season. If they need to gather grasses in the forest or in higher flanks, usually they do not go alone. This way, as they believe it, they can watch each other's back to prevent them being disturbed or in some way misled by spirits. In addition, as they walk into the forest, they also collect firewood for their own use or for sale when they get more of it. It is within this multi-zonal agro-ecological pattern (Dove, 2006) that, on the one hand, people adapt uniquely and live productively. On the other hand, they intimately develop an attachment to Merapi and their land that they had lived on for generations.

People started to make use of sand as part of their income generation activity in the 1990s. Sand mining activity is mainly located in the rivers where ejected volcanic materials travel down during eruption. As the demand hugely increased, sand has been massively exploited after the 2006 eruption. Sand mining became increasingly profitable and since then people who live on the slopes of Merapi are known not only as farmers and livestock farmers, but also sand miners (Mei et al., 2013). Amidst a growing economic value of sand, farming remains as a main livelihood activity for the majority of the people who live on the slopes of Merapi. Some people do not engage in sand mining as they believe it is against Merapi's will, which demands they not obstruct their environment. In some cases, it is also because they believe that rivers in Merapi are streets for Merapi's spirits.

Community life on the slopes of Merapi volcano is characterised by a variety of community activities or traditions practiced in regard to the Javanese worldview and values. In addition to the *Labuhan* ceremony, there are other ceremonies that accentuate the Javanese worldview and values. These ceremonies are popularly called *selamatan* (*selamat* literally means safe), which are basically ritual feasts for requesting safety and avoiding misfortune, especially in relation to the existence of Merapi spirits. *Selamatan* ceremonies are characterised by the presence of meals as people believe the peaceful coexistence between humans and spirits is manifested in having a meal together. The ceremonies essentially follow humans' life cycles – from birth to death – life crises, and celebrations (e.g., weddings, circumcision for boys). Therefore, there are *selamatan* for a newborn baby, *selamatan* for a circumcised boy, *selamatan* for a family whose daughter or son are about to marry, and so on. In addition, ritual feasts are also organised by village to celebrate Islamic holidays. All of these ceremonies are important for maintaining community cohesion and as mechanisms of social integration (Geertz, 1957) since they bring people together.

Another community activity that fundamentally characterises village life in the slopes of Merapi is *gotong royong* or mutual assistance. Literally, *gotong* means carry; while *royong* means together. It has another different popular term of '*kerja bakti*' (*kerja* means work, *bakti* means devotion). One key feature of *gotong royong* is the absence of remuneration payment. There are seven types of *gotong royong* activities (Koentjaraningrat, 1961): 1) *gotong royong* when there is a death or calamity in a family of community members; 2) *gotong royong* when there is a village work that all feel is a public obligation; 3) *gotong royong* when a community member organises a feast; 4) *gotong royong* for taking care of and cleaning ancestral graves; 5) *gotong royong* when a community member needs work to be done around his/her

house such as for home building or major repairs (Sullivan, 1991); 6) *gotong royong* at the time of farming peak activity in all its facets such as planting and harvesting; 7) *gotong royong* in an obligatory nature for providing free labour services for the benefits of village officials around their households. All in all, *gotong royong* is a communal-cooperative activity that represents neighbourly virtues of spontaneity, generosity and selfishness (Sullivan, 1991).

In summary, the socioeconomic and cultural contexts of the community in the present study are characterised by unique ecological relationships between people and their environments, which intertwine with the history of the area and local beliefs about Merapi.

5.2 Themes

The themes were derived using a constructivist grounded theory approach. That said, the themes this thesis puts forward as grounded theory are interpretive in nature; and constructed by the researcher whose past and present experiences and interactions with people and perspectives (Charmaz, 2006) are influential in the process of interpretation and construction. Thus, themes presented in this chapter come from a vantage point where the experiences and interactions of the researcher and the participants during the fieldwork shape the reinterpretation of complexities of participants' worldviews, experiences, and actions. In this regard, the researcher acknowledges the final theory generated is a co-construction of knowledge between the researcher and the participants (Higginbottom & Lauridsen, 2014).

The themes derived provide descriptions of how Merapi became considerably significant for people and communities where this study was conducted, how as an important symbol it became central in people's belief systems, and how it gave people

meanings for the changes that they experienced as a result of being permanently relocated in the aftermath of the eruption in 2010. The themes derived also describe the implication of permanent relocation for ecological relationships between people and their environments. The themes derived include: embracing the volcano for living one's life; losing an integrated living space, losing the meaning of place; benefits and disadvantages of aid; and centring '*gotong royong*' (mutual assistance) as a key for community recovery. The quotes in each theme are presented in Indonesian language.

5.2.1 Embracing the volcano for living one's life

Merapi, the volcano, was embraced as part of people's life. It was not seen as merely a physical form and reality. People saw it not only as a physical force that could bring destructive physical impacts to them when it erupts. More importantly, whether it is erupting or not, the volcano brought more than physical impacts. Indeed, the volcano brought living impacts to the community. A community leader, head of sub-village, described it this way:

Sebetulnya ini, kaitannya Merapi itu, utamanya dianggap bermanfaat.

Pertama, dari kondisi Merapi yang berada di sana itu, sebenarnya memberikan kesuburan sekali, di wilayah kampung yang di Petung itu, memberikan kesuburan, walaupun kondisi erupsi sering terjadi. Warga itu pikirannya sudah kayak kebal. Itu dari saya kecil, dari SMP, sering, sering sekali. Bahkan lebih dahsyat lagi... Sempat Petung itu sampai gelap.

Principally, Merapi is considered to be useful. Firstly, it is since Merapi provides fertility. In Petung, the fertility of the village is supported by Merapi. Even though frequently erupted, it was as if people were immune.

In my past, when I was still in junior high school, eruption was so frequent.

There was even a much bigger eruption... and Petung was dark at that time.

As implied in the view of a community leader above, people believed the volcano sustained their life. It brought life to the people who inhabited the slopes of the volcano. It provided livelihoods for them one way or another. Furthermore, people saw it as their life resource to which they were grateful. In the focus group a number of different comments were made by women from the area regarding this:

Kalau pas nggak bencana, Merapi itu sumber kehidupan. Kalau pas kemarau, itu cari pakan ternak kan susah, jadi simbah-simbah kita itu bisa ke gunung, mencari rumputnya ke sana. Bahkan, jaman dulu itu, katanya simbah-simbah itu ada yang menggarap tanah di lereng-lereng gunung itu, bisa ditanami jagung dan sayuran dan sebagainya. Dulu kan simbah-simbah itu sudah anaknya banyak, terus makanannya semua itu nggak beli. Yang dimakan itu ya hasil pertanian.

Jadi, Merapi itu memang...ketika dia meletus tapi ketika tidak membahayakan kami, ketika dia cuma mengeluarkan material, itulah sumber kehidupan bagi kami. Yang pertama itu. Yang kedua, Merapi itu sesuatu yang indah yang tidak bisa saya ungkapkan.

Merapi itu ya sumber rejeki. Soalnya suami saya pekerjaannya mengangkut material, pasir sama batu. Saya makannya batu sama pasir.

If not in disaster time, Merapi is a life resource. In dry season, when finding cattle food was difficult, our elders could go to the mountain, looking for

grass there. Even, at old time, the elders said that some people cultivated land in the mountain's flank [which] could be planted with corn and vegetables and so on. In the past time, the elders had many children and we did not need to buy food. What [was] eaten were the crops.

So, Merapi really... when it erupted, but when it didn't danger us, when it just ejected materials, those were life resource for us. That's the first one. Then the second, Merapi is something beautiful that I can't express. Merapi is source of fortune. Because, my husband, his job is transporting materials, sand and stone. I eat [from] stone and sand.

Moreover, inhabiting the slopes of the volcano made the communities immediately connected to an essential feature of the Javanese worldview in relation to the centrality of Merapi. Not only were they Javanese, they were also living closely with Merapi. Hence, it is inevitable that Merapi was embraced as part of people's belief system. One community member revealed:

Terus terang nek Merapi itu, opo you, auk taut. Buchan taut gunungnya, tapi taut mistisnya. Aku takut-takut mistisnya kalo di Merapi itu. Kayak, kan denger-denger kayak, neng kono niku medeni neng daerah niku rada medeni, gitu. Jadi kan, di Merapi kan ora iso saenake dewe. Kalo di tempat lain kan nggak ngerti, jadi kan, jadi nggak kepikiran, gitu. Kalo dari sisi itu kan kalo saya ya nyaman aja. Nggak papa kan, kita, kita memang tinggal di situ kok, nggak papa. Soalnya kan kita, di sini kita kan nggak macem-macem lah. Lha wong dulu ada pengalaman gini lho. Waktu ada kegiatan gotong royong di bebeng. Kita kan gotong royong di situ bersih-bersih. Itu

kan ada tetangga itu, dari Sumatera, ikut. Soderanya orang Petung. Dia itu, mungkin nggak tau, baru ikut sekali itu. Kita pun nggak ngerti apa-apa, katanya dia lihat, di situ itu ada air katanya ada ikan banyak sekali, padahal kita nggak lihat. Itu orang lihat itu pingsan. Itu kan sisi lain di Merapi kan gitu.

Honestly, in terms of Merapi, it scares me. Not the mountain, but the mystical thing it contains. I heard from people that here and there in Merapi it was rather scary. You should watch your manner while you're in Merapi, you can't shoot your mouth off. It's different in other places since you don't understand that there are such things so you wouldn't think scary thoughts. To me, [on the other side] I feel comfortable. It's okay, we do live there, it's okay. And we don't do any bad things. There was one incident, one day we had '*gotong royong*' (mutual assistance) in '*bebeng*' (spring water). We did cleaning up there. There was one neighbour's relative from Sumatera joined us. His relative was from Petung. Probably he was not aware, and it was the first time he joined our community work. We didn't grasp what happened. He said that there were so many fishes in the water, but none of us saw any fish. Then he passed out. We didn't see anything. Well, that's one thing about Merapi.

Perry and Godchaux (2005) suggested that people who have spent a lifetime living on the slopes of a peaceful volcano have a tendency to see it as a nurturing environment, rather than a threatening one. With its frequent and deadly eruptions, however, Merapi is far from a peaceful volcano. People's intimate relationship with

Merapi appeared to be not the function of dangerousness of the volcano or the extent to which imminent risk was perceived. Rather, it was laid on the process of meaning making, which was associated with cultural beliefs and worldview centred on the volcano (Lavigne et al., 2008). What is more, the cultural foundation of people's intimate relations with Merapi suggested that it was not merely adaptation to the volcano. More importantly, it reflected a system of knowledge, shared symbols and meanings that outline the assertion on the interconnection of natural events and human life in the Javanese cosmology (Schlehe, 1996).

Part of people's belief system was that people also believed in the role of Merapi's *juru kunci* (or key master) who was considered as having special ability to relate to Merapi. A woman described the late *Mbah Maridjan*, who was the key master of the volcano at the time of the eruption in 2010 as:

Kan emang Mbah Maridjan itu sering mendapatkan apa ya, wisik. Iya. Mimpi, firasat gitu. Iya, gunung Merapi mau mengeluarkan itu mungkin. Ada, sering ada nasihat-nasihat gitu. Karena kan ayah saya dulu yang sering apa, mencukur rambutnya, memotong rambutnya. Iya, didengarkan. Karena kan ya memang pituturnya, nasehatnya itu kan emang emang sangat...kalau bisa meresapi itu sebenarnya tujuannya baik gitu.

Mbah Maridjan often got what was it, '*wisik*' (premonition). Yes. Dream, it's sort of prophecy. Yes, when Merapi was about to erupt. There were often advices from him. As my father was the one who cut his hair, to cut his hair. Yes, he [his advices] had been listened since his sage words, his advices, were indeed really good if you could understand it.

The existence of the key master was central with regard to *labuhan* ceremony as a key ritual for the spiritual interconnection between the Yogyakarta kingdom and Merapi. Also, it was significant for maintaining Merapi as an important cultural symbol that people used in varying degrees to make sense of their world. Both key master and the volcano were symbols. They were culturally symbolic and significant. The volcano carried meanings; so did the existence of the key master who was viewed as spiritually caretaking the volcano. In the existence of the key master, people created and upheld meanings that were seen as significant in their relations with the volcano. The existence of the key master brought more symbolic significance to the volcano as it became a reference for evaluating the way people related with their environment, particularly with Merapi itself. With a reference to the late *Mbah Maridjan* who was a 'key master' of Merapi, a community member revealed:

Seperti Mbah Maridjan dulu bilang, saya pernah mendengarkan kata-kata almarhum Mbah Maridjan, "Sebenarnya di wilayah Merapi itu tidak boleh ada alat berat yang namanya backhoe". Itu saya tetap inget itu, kata-kata Mbah Maridjan "Ndak boleh ada tambang dengan alat berat. Kalau manual boleh," gitu dari dulu Mbah Maridjan. Merusak lingkungan. Sepertinya di tanah itu kan juga ada urat, alur-alur air. Ya kalau dengan alat berat kan ini jadi kepotong-potong. Imbasnya utamanya yang di bawah. Seperti daerah Klaten contohnya, dari dulu alat berat banyak. Lingkungannya jadi rusak. Sumber-sumber yang di atas ini aja, hilang...mati semua. Nah itu salah satunya. Kalau toh pun Merapi lagi murka, ada beberapa orang yang jadi korban. Itu prinsip saya pribadi ya...itu mungkin bisa dibilang kolot, monggo. Kalau untuk diri pribadi saya, saya berpendapat kalau korban

Merapi itu istilahnya orang yang dibutuhkan atau jalan kematiannya ya dengan bencana itu.

As Mbah Maridjan once said, I once heard Mbah Maridjan's words, actually in Merapi area heavy equipment like backhoe should not be operated. I remember those words, "Mining with heavy equipment is not allowed, if it is done manually, it is fine". That was what mbah Maridjan said. That destroyed nature. It's like soil has its tendon, the channels of water. Well, by using heavy equipment those channels might be destructed. In the region of Klaten for instance, heavy equipment has been used since long time ago. It has destructed the environment. The water sources up there have gone. If Merapi is in rage, there are some people who fall as victims. This is my personal belief... you may call me as conservative, that's no problem. As for me personally, I have an opinion that the victims of Merapi, those who are needed or their ways of death are destined to be like that.

People were intimately related to Merapi. People saw Merapi as a living object or living being. People had close relations with Merapi in which they personified it in a way that it became personal and familiar. During a focus group, a community member described:

Merapi bukanlah suatu ancaman dan suatu hal yang menakutkan. [Tapi] sahabat. Karena dari tanah Merapi, warga yang hidup di Merapi ini kehidupannya dari tanah Merapi. Ibaratnya bisa dibilang itu darah daging kita. Namun ya itu tadi, yang penting kita itu waspada, hati-hati, seperti Mbah Maridjan bilang. [itu] sumbernya dari, katanya sih, saya cuma denger-

denger aja dari Prabu Joyoboyo. Iya “sak bejo bejone wong kang lali, isih wong kang eling lan waspada.” Yang penting kita itu apa ya, tau gejala alam, tau tanda-tanda Merapi. Misalkan Merapi tadi mau murka, kalau kita masih ada waktu, ada kesempatan, ya kita tahu diri. Di kala Merapi sudah bisa bersahabat, diajak bersatu...kita kembali, kita hidup bersama lagi. Tentunya dengan catatan, tetap menjaga lingkungan, seluruh alamnya jangan dirusak. Salah satu sumber kemurkaan Merapi itu di mana? Rusaknya lingkungan.

Merapi is not a threat and something to be scared of. [But] best friend. People who live in Merapi, their life come from the soil of Merapi. It can be said that it is our flesh and blood. But well, the most important is we should be vigilant, careful, like Mbah Maridjan said. The source was, it is said so, from Prabu (the sovereign) Joyoboyo. Yes, “the most fortunate is those who are thoughtful and vigilant”. The most important thing is that we know the signs from the nature, understand the signs of Merapi. For instance, when Merapi was about in rage, if there’s time, chance, well we’d better understand. When Merapi has become friendly again, then we work to unite with it... we come back, we live together again. Of course, bear in mind to keep protecting the environment. Nature shouldn't be destroyed. What is one of the sources of Merapi's rage? It’s the destruction of nature.

An elder, who participated in the focus group and recounted his first experience with the eruption of Merapi as early as 1961, provided an account of how familiar he was with the eruptions.

Ha niku sak emut kulo, kulo ngalami niku tahun sewidak siji... milinipun ngilen, daerah Magelang terus. Dadose nek kulo tingali niku, sak ngertose kulo, saben meletus Merapi niku anune bedho-bedho arahe kaleh anu, nopo niku, tanda-tandane.

Well, as I remember it was in 1961... the flow direction, it went to the west, to Magelang area. As I see it, as I understand it, when erupts Merapi has its direction and signs.

Moreover, the elder narrated the eruption of Merapi with terms and phrases that were quite idiosyncratic. The terms and phrases were idiomatic expressions that he was familiar with in portraying Merapi, as if Merapi was a living being. In addition, he conveyed that it was believed the eruption of Merapi always caused new plants to grow. He described the eruption of Merapi:

Njebluk. Duwe gawe. Arep ngguwang uwuh, ngono.

Explode. Has a work to do. To throw trashes, just like that.

Uwit-uwit anyar niku sing jenenge talok gek kuwi tho...biasanya kalau Merapi meletus mesti terus ada tanaman baru, tumbuhan baru. Itu pasti ciri khasnya pasti ada tumbuhan baru yang sebelumnya dulu-dulu belum ada. Kan sekarang itu nggak ada orang menanam tapi namanya pohon talok banyak sekali. Mungkin itu ya perlambang.

New plant we called it '*talok*'... when Merapi erupts we usually had new plant, yes new plants. That the distinct characteristic of it, we always had new plant that was not exist before. No one planted it but we now have so many talok. That's probably a sign.

The personification or anthropomorphism of Merapi (Schlehe, 2008) was indeed something that people comfortably lived with. People even believed Merapi was family to them. In this regard, they did not separate themselves from Merapi. In other word, as in the Javanese worldview, their life was in unity with Merapi and they embraced Merapi as part of their life. A youth leader recounted that:

Jadi, ya mereka walaupun sebenarnya hidup dengan bencana mungkin, tapi mereka menikmati itu. Dulu bisa terlihat ketika pas ada, misal kalo di RT saya kan ada setiap minggu itu kan opo, orang gawean... kan jalan kan ada rumput-rumput, lha itu kan dibersihin, mereka bisa guyon-guyon dari orang-orang tua sampe simbah-simbah itu. dan ngomongin gunung misalnya, itu, yah mereka ngomonginnya opo gunungnya ming watuk, gitu, you jadi udah biasa, dan mereka menikmati. Jadi, Merapi itu ibarat keluarga. Jadi, kita semua warga Merapi itu sebenarnya merangkul Merapi. Jadi, mungkin ibaratnya kalo lagi Merapi batuk misalnya kita tungguin sampe malem, kayak gitu. Kayak jadi nungguin orang sakit. Terus hidup di Merapi juga, ya itu hidup dengan keluarga, jadinya nangkep gimana kita bisa bersinergi dengan Merapi.

So, they lived with disaster, but they enjoyed it. I could see it, for instance, in my village every Sunday there was this community work... they cleaned

weeds from the roads, and they joked around, those old people, the elders. And they talked about the volcano, for example, they talked about when the volcano coughed, like that, so it was the usual chat, and they enjoyed it. It was like a family. So, all of us the people of Merapi, we truly embraced Merapi. It was like we were one family. So maybe, it was like when Merapi coughed, we stood guard until night time, as if we were attending the sick one. Living in Merapi was like living with a family, so it was like we were in synergy with Merapi.

People embraced Merapi in the way they constructed Merapi to be part of themselves. Merapi characterised the community where Merapi became a distinctive part of its life. A community member described Merapi as being a distinctive soul of the community's life and it characterised the community. He said:

Yo nek wong Petung itu ruh'e, rohnya adalah roh Petung'. Wong Merapi ya rohnya Merapi, jangan sampe, wong Petung rohnya Jakarta. Ya, beda pola. Karna tidak setiap teori itu bisa dilakukan di masyarakat.

So, the soul of people of Petung is Petung. Merapi people's soul is Merapi. It's no way Petung people have Jakarta soul. It's a different pattern we have. Every theory has its own merit.

The accounts mentioned above reflect that people did not merely live side-by-side with the volcano. Stemming from mystical traditions that rendered the Javanese cosmology (Schlehe, 1996), people's belief systems guided their understanding and actions in concrete social situations and ecological environments that were not static

over time since Merapi is the most active volcano in Indonesia. People's belief systems indeed reflected what is cultural (Geertz, 1964). Moreover, what is cultural indicates that people developed systems of knowledge and shared symbols and meanings. Within the prevailing system of knowledge and shared symbols and meanings Merapi became a living realm as it was personified and vividly believed to give life to people. People did not merely adapt to the physical realm of the volcano and live at peace with it. Rather over time they developed relations. They were being up-close and intimate with the volcano. And after all, people seemed to be harmoniously 'dancing' with the volcano.

Summary

The theme "embracing the volcano for living one's life" has presented how people profoundly embraced Merapi into their lives. First and foremost, Merapi was seen as a life resource. People viewed Merapi as significantly important to their lives as to how Merapi became resourceful for their lives rather than a risk. Moreover, Merapi was integrated into people's lives since it was central in the Javanese worldview as well as in their belief system. People signified it as a cultural symbol where the Javanese worldview situated it as chiefly important. As it became cultural, people intimately personified it. As such, Merapi was transformed to becoming a realm, which was personal, familiar, and comfortable to live with.

5.2.2 Losing an integrated lived space, losing the meaning of place

People were shadowed by their lives before the 2010 eruption. Before being relocated, in general they had sizable living space that comprised housing and farming

space. During the fieldwork, people characterised their lives prior to the relocation as mostly comfortable and not difficult. A female community member recounted:

Tapi kalau yang dulu itu kan, dulu kan di Kinahrejo itu kan luas ya halaman rumah. Iya, rumah luas, halamannya juga luas. Terus rasanya itu kalau rumah luas, halaman luas, itu kan rasanya seneng tho Mas... bisa fresh gitu kan. Kalau di sini kan kayak, apa ya, nggak bisa kayak dulu. Nggak bisa sebebas dulu. Iya, nggak bisa seperti dulu. Terus dulu kan bisa ngurusi hewan, memelihara gitu to. Pertanian gitu, kan lahannya ada. Kalau sekarang kan jauh. Apalagi kalau warga Kinahrejo sekarang, relokasinya itu sekitar 9 km dari Merapi. Kalau dari Kinahrejo sekitar 5 km lah. Itu kan sekarang jadi sulit, setiap hari harus naik turun naik turun.

But, back then in Kinahrejo our land was sizeable. Yes, our house was big, also our yard was big. So, when we had our house and yard spacious, we felt pleased, right... we felt fresh. But here, like, what it is like, it's unlike what it was. It is not as free as before. In the past we could raise cattle, attending cattle, like that. As for farming, the land was available. But now it is far. Furthermore, now for the villagers of Kinahrejo, the relocation site is 9 km away from Merapi. While from Kinahrejo it is still 5 km away. It becomes hard now, every day we should go up and down.

It was within spacious living space that people felt their lives were sustained prior to the relocation. People revealed that not only had they had spacious living space prior to the relocation, but also they could sustain their lives because the space for production was integrated into the living space. People owned land where within their

yard they grew vegetables, fruits, and plants for their own daily consumption or for yielding daily or seasonal income from it. Also, it was very common that people shared with each other what they grew in their yards or gardens. In other words, people sustained their sense of being through their productive activities within their land. Another female community member described it:

Ada ibu-ibu ya... yang buruh tani, kalau pas musim nanem padi, atau metik padi juga seperti itu. Tapi walaupun enggak, itu ada yang ibaratnya njagakake hasil kebun aja sudah bisa untuk penghidupan, gitu lho Mas. Kan paling enggak ada yang kelapa, ya. Kelapa itu kalau saya sendiri punya kelapa itu... 4 batang, 4 pohon. 4 pohon itu setidaknya untuk satu bulan sekali metik itu minimal 50 kelapa dapet, kok. Ibaratnya hanya untuk sekedar beli-beli kebutuhan lah, itu sudah bisa kok. Itu baru kelapa, belum yang manggis. Manggis itu..., walaupun setahun sekali, itu misalnya pas buah, misalnya juga kita hemat-hemat le ngecakake, gitu nggih..., itu satu tahun sekali saja masih bisa untuk menopang kehidupan. Itu pun pohon saya masih kecil. Ada yang pohonnya sekali panen itu 5 jutaan bisa dapet.... Hampir semua orang punya itu. Meskipun ada yang tidak punya, cuma satu dua orang. Yang enggak punya buah yang macem-macem, paling ndak duren itu ada. [atau] Pete. Tempat saya enggak punya pete tapi tetangga ada yang pete. Pokoknya kita merasa anyep [hidup seperti itu]. Makanya pindah di sini itu ya seperti saya bilang tadi itu, seneng enggak seneng. Kalau dibilang enggak seneng, ya..., gimana. Nyatanya seperti itu kan kita ya harus menerima keadaan, itu kehendak Allah. Tapi kalau inget dulu itu, aduh..., dulu itu istilahnya tinggal apa ya..., tinggal kesehariannya itu mikir

kehidupan, sama njagakake hasil kebun kan sudah bisa, tapi sekarang kan kita mau nyayur aja, kalau nggak beli kelapa, nggak punya.

There were housewives... who worked as farm labourers, during the rice planting time, or harvesting time. But even if they didn't, by relying only on yields from their farms they still could make a living, like that Mas. At least we had coconut trees, right. The coconut tree, I had... 4 poles, 4 trees. From four trees, at least once a month I could harvest at least 50 coconuts. Only from it, it was enough to afford my daily needs. It was just from coconut, not included from mangosteen. The mangosteen... although harvested once a year, if we could be efficient in our spending, like that... even though only once a year, it could still support our life. That was from the tree that was indeed still small. I found there were some people that could yield up to 5 millions rupiah once they harvested it.... Almost everyone had it. Although there were those who didn't have, only one or two. Those who didn't have it, at least they had durian trees. [or] 'Pete' (green bean). I didn't have 'pete', but my neighbour had. It felt soothing [to live like that]. So, moving here, well, as I said previously, happy but also unhappy. If we say unhappy, well... the fact is, like that, we should accept the condition, it's God's will. But if I remembered the past, ouch... in the past, I can say, I only needed to... depend on our garden and it was sufficient. But now, if we want to cook, if we don't buy coconut, we won't have it.

People's sense of being was also characterised by social interactions that occurred in place. One of the important social interactions was 'gotong royong' where as a

community they did mutual assistance. A head of village described it as a true characteristic of the community:

Kompak karo '*gotong-royong*', Mas, yang membedakan hanya itu. Iya, cirinya orang desa itu.

Cohesiveness and '*gotong-royong*', those make the difference. That's the characteristic of people in the village.

In the relocation site, despite it still being in proximity to Merapi and considerably safer than in the village of origin, people immediately felt uncomfortable with the much smaller house and land size they had. Before the relocation families in Merapi generally owned a hectare of land on average (Triyoga, 2010), but after being relocated they were only entitled to a house on land the size of one hundred metres square. A community member revealed his feeling:

Dengan ukuran yang segini, arep nyaman gimana? Kita ini dulu kalo di atas, orang mandi itu piye carane? ketika masuk keluar kamar ke kamar mandi itu tidak kelihatan seorang tamu yang kebetulan ada bertamu. Sekarang? Bleng bleng ae ngerti wong adus arep adus Yah karna kondisi yang seperti ini. Belum lagi urusan masak-memasak. Lha arep nyaman soko endi, bien iku geni nang arepan ono ketel. Di halaman, bikin perapian, bakar telo bisa. Sekarang, gegeni ning arepan, opo meneh sampe bahan bakarnya sing nganggo ban, dipisuhi wong. Banyak hal yang tidak membuatku nyaman. Kemudian, kalo saya nggak begitu ya, ada yang hobinya miara ayam, di sini nggak bisa ngurusin ayam sembarangan, nek sembarangan iso digajuli tonggone. Dulu itu, miara ayam diliarkan gitu, paling sobone ke kebon-

kebon. Sekarang ke kebone masuk kebon tetangga orang lho. Itu mending kalo ke kebon, lha kalo ke rumah orang? Karna jarak yang berdekatan itu. Kemudian, opo ya, sampaaah, macem-macem lah yang ndak bikin nyaman itu. Sebetulnya rasa kebebasan itu ya. Kalo dulu kebebasan ini batasannya agak lebih jauh, kalo sekarang cukup pendek, cukup tipis sekali kebebasan.

With this size of the house, how can you be comfortable? Back then up there, how did people take a shower? We can use, enter and exit the bathroom without being known and seen by a visiting guest. Now? It is visible when we enter the bathroom. And also, when we do cooking. It is impossible to be comfortable. We used to have kitchen as far-reach until the front and backyard. We could set fire and roast cassava in the front yard. So there are many things that are uncomfortable for me. Another example, if one wants to raise chickens, they have to be kept in the henhouse otherwise they would bother our neighbours. Back then people could release their chickens to wander free. And this has to do once again with close distance with our neighbours' house. Then, what else? Garbage, there are many other things that can cause discomfort. Actually, it is the sense of freedom. With the bigger space we had, we had more freedom than in here, less space with less freedom.

Not only was the space limited, the settlement in the relocation site prevented them having a productive life as they used to because the government' relocation program provided only housing for families. In the relocation site they did not have yards and farmlands. So, basically they had no productive spaces amid the

government's decision that the village of origin was prohibited for resettlement, followed by the government not rebuilding any basic infrastructure in the village of origin.

Permanent relocation resulted in people losing the connection between house and land as an integrated space for living and space for production. There was only a house for every family and no space for productive living in the relocation site. In this regard, a community member recounted that they might be safe, since they were being relocated further from the Merapi summit, but at the cost of living uncomfortably.

Kalau relokasi itu you harus ada dua yang diwujudkan dan itu mutlak diwujudkan: satu aman, kemudian nyaman. Aman bisa jadi di sini, sekarang. Tapi kalo urusan nyaman, apakah di sini nyaman? Tidak. Menurutku tidak begitu nyaman. Ya tidak begitu nyaman sekarang saya melihat orang tua, gitu, saya melihat orang tua tuh mesakke gitu. Tidak ada aktivitas... Kalau pun harus naik turun, saya tuh punya mbokde di ini harus naik turun harus cari kendaraan. Akhirnya dia ngojek. Ngojek harus ngasih duit toh. Duit dari mana? Sekarang mungkin masih punya, Cuma untuk beberapa kali naik, selesai udah. Akhirnya nanti... di saat panen justru nanti simbah ini nggak bisa naik karena nggak punya duit, lho piye carane. Akan ngenes juga toh akhirnya? Makanya saya mau mengistilahkan, ketika rehab-rekonnya itu tidak menyentuh... hanya menyentuh soal fisik, [sedangkan] soal spirit tidak disentuh, makanya nyengkakne patine wong tuo sebetulnya. Kemudian kedua, ya kita tuh suasananya jadi perumahan, deket gini toh? Kan tidak nyaman toh?

When we talk about relocation, there need to be two vital points to take into consideration: number one is safety, number two is comfort. Right now we might be safe here, for now. But are we comfortable? No. I think it's not really comfortable here. Now it is not really comfortable. When I see the elderly people here, I feel pity on them. They have nothing to do. If they wanted to go up there to attend their land, they have to find transportation, they have to pay for rented motorbike. Where do they get the money? If they have money now, it would only take several trips up and down before their money runs out. When the harvest season comes they wouldn't be able to make it up there because they do not have any money anymore. It's an irony, isn't it? What a pity. So I find this rehabilitation-reconstruction phase doesn't tap on the spiritual aspect, only the physical aspect. That's why it is difficult for the elderly people to live here. It shortens the life of elders. Another example for discomfort is the living space. We are now living in a housing complex. Our houses are next to one another. It's not comfortable, is it?

A female community member revealed that living comfortably was not necessarily about having enough money. It was not only characterised by the possession of hard cash. Indeed, what was considered worthwhile was having a degree of freedom within one's own space of living. She said:

Kalau aku sih ngerasa lebih nyaman, lebih enak, pas di atas sana. Kalau di sini itu kalau nggak kerja, kita harus punya uang, itu serasa belum nyaman [apabila tidak punya uang]. Terus kalau di atas juga kita merasa lebih bebas, mungkin kalau kita ada tetangga, atau kita sendiri nyetel musik keras itu

tidak begitu mengganggu tetangga. Contohnya kayak gitu. Kalau di sini itu kita nyetel tivi aja tetangga bisa dengar. Apalagi kalau di shelter lebih parah lagi, karena dindingnya kan cuma dari bambu.

I felt more comfortable, better, when I lived up there. Just as I said, here if without a job we should have money, it would be uncomfortable [without money]. Also, up there we were more free, as we wanted to turn on the music loudly, it wouldn't disturb our neighbours. That's for example. Here, even turning on television, our neighbour can hear it. It was even worst in the temporary shelter because the wall was made of bamboo.

Furthermore, as observed by a youth leader, there were people who felt uncomfortable living in the relocation site. They still could not accept their new living space in the relocation site and wanted to go back to the village of origin. A youth leader revealed:

Masih banyak orang-orang tua yang, apa ya, kayak kalo dilihat tuh, masih kadang suka... ngerantes, opo you bahasa indonesiane?...linglung. Masih suka pingin ke atas, kayak gitu, jadi mereka masih belum bisa menerima seutuhnya, kayak gitu. Belum bisa menerima seutuhnya kalau mereka di lingkungan yang baru dengan kehidupan yang baru, kayak gitu, pinginnya masih di atas, kayak gitu terus...

There are still many elders who, what is it, when we see them, they are sometimes still... 'ngerantes', what is it in Indonesian? In dazed. They still wanted to go up to the village. So, they still can't accept completely to live

here, like that. They can't fully accept that they live in a new environment with a new life. They always wanted to go up there.

As pointed out by the account above, a new environment in the relocation site was even more difficult for the elders to live with. The new environment where space for production was no longer existent left the elders not only without productive activity, but also with limited activity. Therefore, not only was living space disintegrated, it also disconnected people who for years had developed habits, skills, and practices from the daily activities embedded throughout their life. A community member whose elderly mother lived in the same new house described that being permanently relocated, at worst, shortened the life of elders.

Makanya saya mau mengistilahkan, ketika rehab-rekonnya itu tidak menyentuh... hanya menyentuh soal fisik, [sedangkan] soal spirit tidak disentuh, makanya nyengkakne patine wong tuo sebetulnya.

So, I find this rehabilitation-reconstruction phase doesn't tap on the spiritual aspect, only the physical aspect. That's why it is difficult for the elderly people to live here. It really shortens the life of elders.

As people started making comparisons between living in the village of origin and living in the relocation site, the connections between house and land as an integrated space of living and the family's future were profoundly drawn. Living in the relocation site prohibited them to live productively within their property, their land. The land that each family was entitled to in the relocation site was basically only for housing. Yet, it was not an integrated space for living and for production.

Mitchell (2010) pointed out that once displaced people experience loss of connection with their associated livelihood assets that impacts on them being more vulnerable to the shock of the disaster and having more difficulty recommencing livelihoods. Furthermore, Mitchell pointed out the issue of insecure land tenure as an underpinning problem for the rebuilding and resumption of livelihoods post-disaster in many developing countries. As such Mitchell suggested that addressing land tenure issues after disasters is critical and that the choice of resettlement site can produce a significant impact on whether relocated people are able to commence their pre-disaster livelihoods.

Nevertheless, Mitchell's assertions on land appear to be focusing too narrowly on land tenure and livelihood issues per se. The accounts conveyed by members of the community in this study revealed what needed to be addressed was not the issues of land tenure nor the choice of resettlement site nor merely livelihood. Against the backdrop of what they experienced pre-disaster, it was more crucial for people to get back the land where space for living and for production were integrated. People needed a place that is composed in a manner that is meaningful to them (Fullilove, 1996). This was because the meaningfulness of place was shaped by a person's past and was positioned in practices that were based on social history (Paasi, 2002).

In the relocation site people had a house, but they did not have space where they could do farming and/or raising cattle anymore. They could not raise cattle for meeting daily needs and for ensuring the family had savings or investment for meeting future needs. They basically could not grow anything for themselves or for sharing with their close neighbours. Moreover, they apparently could not plant bigger trees that took years to grow for the purpose of meeting the family's future needs, especially as their children grow up. In the current settlement, it was also impossible

for parents to prepare a space within their land where they could build a new or an extended house for their children once they get married. In an interview, a father of two described:

Tapi pilihan relokasi itu adalah pilihan masa depan anak-cucu, gitu kan? Pilihan yang pahit untuk anak dan cucu. Kalo di atas dulu, ketika tidak terjadi bencana, kita itu tinggal nanem terus, nanem terus, nanem terus. Besok anak sudah mau keluarga, kemudian kita sebagai orang tua harus memfasilitasi anak tersebut, misalnya harus membikin rumah, harus ini-ini-ini, kita mikirnya sudah tinggal... kalo yang harus kita pikir itu sekarang jadi sepuluh, dulu cuma tiga yang kita pikir, cuma satu yang harus dipikir. Contoh misalnya, kalo sekarang di relokasi, tuh kita harus mikir, besok waduh ini anakku dadi malik limo ono kiro-kiro, gek kamare cuma ana loro, berarti saya harus siap dengan dana untuk mbangun tiga kamar lagi. Tapi kalo di atas nggak usah harus mikir, tiga kamar ki ning ndi? Gitu lho. Wis cukup, kae, sing lemah kae didegi wae. Kan gitu. Saiki, garek nggolek duit nggo tuku materiale, selesai. Tapi kalo sekarang, dua hal yang harus kita lakukan. Secara finansial kita harus punya duit, kemudian yang lainnya harus eee cari,... arep digok ndi, you? Kan masih bingung. Ketika ini membangun di atas, sesok mung mulih meneh. Kalo kita harus cari tanah yang lain, duitnya lebih mahal. Lebih banyak duit gitu kan?

But the option to relocate is also the option for the future of our children and grand children, right? Nevertheless it's a bitter option for them. Back then, when there was no disaster, we would just keep planting, planting, and planting. When our children are about to start a family, then as parents we

facilitate them, we help them building a house, this and that. In the past it's like we had to take into account three things, now we have ten things to think about. For example, now in relocation we have to calculate the living space for the next children to come. If then I had five children, two rooms for five children wouldn't be enough. We have to build more rooms. But it gets difficult with the space we have now. We simply don't have enough space. It was different back then. We had a big space to make more rooms. We could just point our finger where in our land we wanted to build. The rest was to buy the materials. But now, first we have to have money, then to find the space.

Summary

The theme “losing an integrated living space, losing the meaning of place” has highlighted the importance of living space in terms of space that integrated space for housing and space for production. Within such living space people had developed habits, skills, and practices pre-disaster. The habits, skills, and practices represented the way they uniquely adapted and productively lived with reference to the distinctive ecological environment where Merapi is situated. Losing such integrated space in the relocation site had resulted in losing the meaning of place. As there was only space for housing, people could not associate it with the family's future as they expected and projected it. Such dissociation only exacerbated the loss of the meaning of place. The loss of the meaning of place appeared to be interwoven with people's attachment to the village of origin.

5.2.3 Benefits and disadvantages of aid

People were grateful for the assistance they received from a variety of actors in different phases of post-disaster. Being beneficiaries of a multitude of aid, they acknowledged how the aid delivered by various organisations and agencies was of benefit to them. As they admitted it, some aid brought supports (for example as in the distribution of cattle and cattle foods) for the existing conditions, whereas some others introduced something new and unfamiliar and brought a mixed impact for the communities.

The most visible form of aid was the relocation itself. It brought them to live in a newly built housing complex. The new housing complex was a new physical space in every aspect. There were new houses for every family. There were also new community facilities such as new mosque, new community hall, and playground for children, which the community had never had before. Furthermore, the size of the village became smaller as it became a compact cluster of houses.

The houses were smaller and with less room. Moreover, the houses were wall to wall to one another. The new physical setting of housing brought people to experience a sharing of physical space that they had never had before with their neighbours. Two community members revealed:

Arep dulu nyetel musik, punya radiotape sendiri, mungkin volume 10-11 sampai 15, oke. Jauh-jauhan. Sekarang, volume 5 itu wis harus mikir dulu.

I used to have a radio tape, when I wanted to listen to music and I wanted to turn up the volume, maybe to level 10 or 11 even 15. It was okay. There was distance. But now, I must think before I set the volume even only to level 5.

Tantangan pertama bisa dilihat dari rumahnya yang dulu kan, di sana rumah jaman dulu rumahnya gede-gede. Kaget kan... Trus yg kedua mungkin dulu masyarakat tuh udah rumahnya gede, halamannya luas, jadi mau ngapain aja tuh bebas, kayak gitu, misalnya beternak ayam mungkin, bisa dilepas gitu aja. Di sini udah jadi beda.

The first challenge as we can see is the house. We used to live in the past, in a bigger house. It's a shock really... then secondly, maybe since people got used to having big houses, with big yards, so they had space to do things, like that. For instance, when they breed chicken, they could just release their chicken, just like that. While in here, it's a different story.

For the most part, the new physical setting was the most unfamiliar situation that the communities had to deal with. Before being relocated, people used to live in the setting where house, yard, and farmland were integrated. Such integration was a unique practice of day-to-day adaptation to Merapi that had been carried out for generations. In this way, their adaptation involved the historic development of an ability to productively adopt to the ecology of the volcano (Dove, 2007). In this regard, the aid in the form of new houses and the new housing complex not only took away people's space for production that resulted in the unavailability of livelihood, but also in a way disrupted the pattern of connection with Merapi.

In spite of that, the aid that was transformed into the new housing complex was appreciated for its neatness. Also, it brought better housing for some people and it resolved the issue of land tenure (Mitchell, 2010). A male young adult revealed his observation:

Kelebihannya, dari dulu sama sekarang ya, kalau sekarang lebih tertata untuk rumah. Buchan rumah saya sendiri tapi juga tetangga. Kalau dulu ada yang manggon di tanah kas terus rumahe bambu, sekarang permanen, ada sertifikat.

The positive is, compared to the past, the houses are more orderly arranged. It is not only my house, but also my neighbours' houses. In the past, there were some people who lived in the village-owned land with their houses made from bamboo, now they have a permanent house, we all now have the certificate.

In addition, the wall-to-wall housing arrangement was appreciated because it could facilitate more daily face-to-face interaction between members of the community. Referring to the distance between houses in the old village, again a male young adult revealed:

Dulu kan, mungkin kalo nyapa juga susah. Sekarang udah tiap hari bisa nyapa [tetangga].

In the past, it would be difficult to meet and greet. Now we could everyday greet [the neighbours].

Nonetheless, the new housing complex created a new dynamic of social relations. The wall-to-wall housing arrangement made people live physically closer to each other, however it did not necessarily make people see each other as frequently as expected. A community member described:

Yang agak kurang itu mungkin kayak, apa you, walaupun sekarang tinggal iki wis, wis berdekatan, tapi kadang kayak mungkin ketemuan sama orang itu nggak iso sering. Dulu kan nek ning kebon kan iso bareng. Kono-kono kan ketemu neng dalan. Saiki wis, kadang orang itu kalo di sini kan wis pagi, pagi sampe sore. Lha iki orang tetanggaku, dulu itu seberang jalan sama yang belakang rumah ini lho. Sekarang kan ketemuan paling nek wis magrib, sholat gitu.

Even though we live close to each other now, it is not really easy for us to get together often. In the past, we could go to the farm together, we met up on the way. But now, people are busy from morning to evening. I have a neighbour who used to live across the street and another neighbour of mine whose house is back there. Now we only meet on evening prayer, like that.

The loss of income and livelihood caused by the eruption, the unavailability of space for production in the new housing complex, and the limitation for reviving the livelihood practice as it used to be in the village of origin left people with narrowed options to support their families. All of these came at the cost of people greatly focusing on making money. On the one hand, it could be understood that people needed income to provide for their family. On the other hand, it created a situation of a breakdown in social relations. A female community activist observed it and revealed:

Perekonomiane wis rada kaya mau jalan, dari segi ekonomi itu. Tapi kalau segi kehidupan yang sosial itu memang sampai sekarang pun saya masih

merasakan sendiri-sendiri, gitu Mas. Kayaknya satu sama lain itu kayaknya cuek.

Terus Mbah X, dulu di rumah kalau dibilang rekasa juga enggak, cuma karena masih banyak ragad anak, yang dipikirkan, yang dibiayai, ya bisa dibilang hanya cukup-cukup sajalah. Nah, sekarang karena dari hasil punya lahan luas yang untuk ditambang [setelah erupsi], sekarang ini dia satu rumah aja yang punya motor dua. Sepeda motor maksudnya. Padahal sing isa numpak hanya satu [tapi] punya dua. Terus ibaratnya dia ini sekarang cukup di rumah, kalau dari materi lebih daripada dulu, 180 derajat berubah. Tapi kalau dari segi rasa, dia sering curhat sama saya, kadang nangis sendiri. “Kalau dulu, saya ini di rumah itu rasanya habis dari nyuci, habis dari ngarit, cari rumput untuk ternak...saya itu duduk di depan rumah”, kan kebetulan di depan rumahnya kan bisa dipake untuk jalan itu lho... jalan tembus atau jalan warga. Itu dia bilang gini, “Saya itu punya rasa dihormati orang, paling enggak orang di depan rumah, ‘Kulanuwun, Mbah.’ Merasa diajani, duwe omah, merasa ibaratnya, ada anak kecil yang sembarangan main, itu... [saya bisa bilang] ‘E, aja ning kono, mengko ndak ngrusakake kuwi,’ itu punya hak. Sekarang ini rasanya itu, walaupun punya..., kan sudah diberi sertifikat, walaupun itu punya saya, ya. Tapi rasanya sekarang itu kok nggak sayang sama orang, saya itu kok nggak ada yang menghargai, gitu lho rasanya”...seperti itu curhatnya dia.

The economy is about to work again, that's from the economy aspect. But for the social life, I feel it separated. People are ignorant to one another.

Then *Mbah X* [a name of an elder], in the past she was considered not poor, but as she had many kids to provide for, so it can be said that she just decently lived. Then, as she gets income from sand mining in the big land she owns [after the eruption], now she even has two motorcycles. She has two even though only one person in her house who can ride them. Now what she needs to do is just to stay at home, she has more than before materially, it's a 180 degrees change. But she feels differently about it. Often, she tells me and sometimes she cries "In the past, after washing clothes, gathering grass, I just sat in front of my house". Then, when people used the street in front of her house as a shortcut, she said this, "I felt of being respected by people, people who passed by at least they would say 'excuse me, *Mbah* [granny]!' I felt being appreciated. I felt that I have a house. When there is a kid who played carelessly in front of the house, that... [I could say] 'Hey don't play there, you could damage it'. It felt like I have a right to do so. Now it feels like, although having... receiving the certificate, although it belongs to me. But I feel now people don't respect other people. They don't pay respect to me anymore". That's what she said.

As people in general got preoccupied with making money to sustain their life, the social relations started to break down and the social life started to change. A community member whose family decided to return to their liveable house in the old village described the loss of village-life relations as being behind his family decision. He described:

Di huntap ini saya rasa,... piye ya secara Indonesiane, kalo Jawa namanya kemrungung. Hidup kemrungung lho saya lihat itu. Opo you Indonesiane

kemrungsung? Tergesa-gesa. Iya yang kita lihat, orang tuh kemrungsung, nggak seperti di kampung. Di kampung kan nyantai.

Kalau bar magrib kalau di huntap saya tuh udah sepi. Mungkin orang kecapekan kerja seharian. Iyo sangking kemrungsung mau tho? Sepi. Nggak ada orang keluar. Nek wong Jowo mbiyen kan ono istilahe tek tek... jagongan sik, srawung... Saiki jarang. Walaupun mungo omong-omong kosong. Yo mungkin karna juga kecapekan. Awan kemrungsung nyambut gawe opo mungkin lokasi kerjone adoh juga. Sepi nek mbengi mah. Yo podo wae nek kene ki, aluwung auk nek omah neng etan you podo wae. Di huntap sepi. Aku aja, walaupun sepi ya tetap enak omah neng etan.

In '*huntap*' (permanent relocation site),... how to express it in Indonesian language, in Javanese language it's called '*kemrungsung*'. To live in a '*kemrungsung*' way. What is it in Indonesian language? In rushed. Yes, that's what we see; people are in rushed, '*kemrungsung*', not like in the old village. It's a relaxed life in the old village.

After sunset it's really quiet in my '*huntap*'. Maybe people are tired from working all day long. That's because they live in '*kemrungsung*' way. It's quiet. Nobody goes out. For Javanese people, there's an expression '*tek tek*'... '*jagongan*' (to get together), '*srawung*' (to socialise). Now it's a rare opportunity, even just for a chit chat. Well, maybe they're too tired. In the daytime they are '*kemrungsung*' or maybe they work far from here. It's quiet in the night time. Then it would be no different from my house in the east. It's quiet in '*huntap*'. It's also quiet in my own house; therefore, it's better to live in my own house in the east.

One aspect of newness of physical setting that was brought in by the aid was that it prompted social network change. First, the change occurred in the way that the relocation site accommodated not only people from one village, but also people from different villages. By no-one's choice, the new setting eventually put people in a larger-than-before social network. Second, the change occurred as the result of not all community members within the village being resettled in one relocation site for different reasons (e.g., they had their own property in other location, had family to live with in another place, or chose to relocate to a different relocation site).

Such social network change engendered subsequently different outcomes. The change in terms of an expanded social network led to a positive outcome when the community found a way to organise the close proximity between villages into a collaborative initiative. A community member described how his village, which was considered further from the summit of Merapi, and an adjacent village, could manage cooperation after both villages were relocated to one site.

Kalau dulu Gungan dan Srodokan malah sendiri-sendiri [sebelum erupsi]. Walaupun dukuhnya di tengah, tapi untuk kepengurusan kampung, seperti gotong royong atau apa, sendiri-sendiri. Tapi setelah di sini, kita jadi satu. Jadi pertemuan rutin yang biasanya sebulan sekali, walaupun nanti berjalannya bisa 2 bulan sekali, itu satu pedukuhan 2 kampung, langsung di aula, di masjid itu.

In the past, Gungan and Srodokan were standing alone to one another [before the eruption]. We had separate village organisation and as for '*gotong royong*' we conducted it separately by each village. After we moved

to here, we are united. We usually held a meeting regularly once in a month, now we organise it once in two months for the two villages. The meeting is held in the hall, in the mosque.

In a different condition, the change led to a negative outcome when those recognised as respected elders did not relocate to the same site. In this regard, the aid resulted in disrupted or disturbed social networks (Bland et al., 1997). There was an effort to build the relocation site that bore some resemblance to the layout of the village of origin (such as whose house was next to one's house, whose house was on the side of the village road, etc.). However, such effort could not prevent people from seeing the weakening of sense of community as respected elders of the community happened to be living separately and did not engage anymore in the decision-making process. A youth leader revealed his observation:

Masyarakat tuh, apa namanya... jadi satu rukun guyub itu susah, apalagi banyak tokoh-tokoh masyarakat yang sekarang udah nggak tinggal di sini lagi... Karena ini, tadi, tokoh-tokoh masyarakat yang berperan dalam itu kan banyak yang nggak di sini lagi, dari berbagai RT, jadi... ya...
Sebenarnya itu yang berperan, jadi, pak dukuhnya itu cuman manut sebenarnya, itu kalo di sini. Ya nggak berani ngambil keputusan. Final-nya. Jadi, mesti manut yang di ini.... [ditokohkan]. Ada banyak sebenarnya. Satu, dua, tiga, empat, lima, enam, dari berbagai kan ada empat RT dan.... itu hilang semua.

The community here, what is it... it's difficult to maintain togetherness, especially because those respected elders, they do not live here with us any

longer.... It's because, as I mentioned earlier, many of the respected elders who used to play important roles in such matters do not live here anymore. They came from different *RT* (abbreviation of neighbourhood association), well, yeah.... Actually that's the issue, well, the leader of this village only follows on, that's here. He doesn't make his own decision. The final one. So he must follow... [the respected elders]. There were many of them. One, two, three, four, five, six, from four different *RT* and... they all are gone.

As Perkins et al. (2002) highlighted, sense of community, social capital, and place are interrelated. The relocation engendered the physical changes of place as well as the disruption or disturbance of the social network. The disrupted or disturbed social network indicated the disruption of sense of community on the one side. On the other side, it indicated or led to disruption of social capital. Furthermore, the aid in the form of group-based income generating activities, termed as an economic empowerment program mostly targeted towards women, was also seen to inflict disturbance to the social network of the community. Notwithstanding its benefit of introducing new skills and providing short-term economic assistance, it was perceived as loosening social cohesion. A community activist revealed:

Cuma, ya itu tadi, saya sih tidak setujuanya ketika bantuan ini dengan kategori, dengan ketentuan kategori. Contoh misalnya “saya mau bantu tapi tolong bikin kelompok”. Kelompok usaha yang sudah ada dipecah, kayak gitu saya nggak setuju. Sehingga, di sisi lain manfaat, tapi di sisi besar justru malah rugi itu, persatuan jadi pecah. Kalo manfaat iya, seketika iya. Tapi manfaat yang keberlanjutan?

But, like I told you before, I can't agree with it when the aid came with categories, with rules on category. For example: "I would like to help you but first you form groups". So, we need to break down the groups that already exist [from the old village] to form smaller groups. That's why I don't agree with it. On the one hand, there's a benefit, but on the other hand, the loss is bigger, that we're breaking apart. The benefit is short lived. How about its benefit in the long run?

The communities received aid in different phases. They recognised that they got benefits from the quick responses delivered by various actors, organisations, and agencies. While the distribution of aid was quick enough, they noted the issues with coordination and needs assessment. A lack of coordination came at the cost of not only unequal distribution, which was not unusual (Häberli, 2013), but also tension within the community. A head of village revealed:

Karo meneh sing tak anggepke negatif Mas, kadang wong mbantu ki niatane baik, tapi ora koordinasi. Sing entuk ituuu wae. Iyo ra Mas? Sing ora, oraaa. Harusnya nek, nek iya. Nek dha teka, kuwi nek dha mau datang ke desa- desa itu nek saya tidak akan menerima Mas. Hanya akan mengarahkan... Lha you itu yang nyok jadi masalah yang di shelter itu Mas. Karena kurang koordinasi dari pemerintah desa, tekane nek nok shelter Gondang Siji ki enenge ya mung... shelter Gondang Siji mung Kaliadem.

Then again, what I consider as negative. Sometimes people helped with good intention, but without coordination. [The ones] who got aid were just the same. Right? Who didn't [get], nooo. That was the problem that

frequently occurred in the shelter. Because of lack of coordination then aid kept arriving only at Gondang Siji shelter ... Gondang Siji shelter that means only for Kaliadem village.

As for the issue of needs assessment, it was found that lack of needs assessment compromised the usefulness of the aid, both at the time of it being delivered and for its long-term benefit and its impact in the long run. A community member described:

Kalo bantuan sih sebenarnya dibutuhkan ya, tapi tidak pas dengan kebutuhan kita yang sebenarnya. Yaa, karna modalnya hanya spontanitas itu ya, jadi ketika ini dari lembaga atau mungkin dari instansi pemerintah misalnya dari Kemensos mau mengadakan budi daya jamur. Itu kita butuhkan sebetulnya, tapi tidak pas, lha kenapa cuma sampe segini thok selesai? Padahal yang sebenarnya dibutuhkan adalah budidaya jamur ini berlanjut terus. Sekarang kendalanya, di shelter kita masih bisa produksi jamur, karna ada lahan. Sementara di huntap, belum terjawab masalah itu. Karna tidak ada lahan.

Aid was needed. But they might not fit with our actual needs. Yeah, well, because they came from spontaneity. When an agency or for example the Ministry of Social Welfare would like to implement a mushroom production program, we need such program but in the long run it just doesn't fit. They did not finish properly what they started. They closed the program on the midway of the process. What we actually needed was for the program to be sustainable and continuous as we moved to the relocation site. They started the program when we were still in the shelter where there was enough space

to do it. When we moved to '*huntap*' (permanent relocation site), then the problem started regarding the availability of space. There's just no space to do it.

Summary

The theme "benefit and disadvantages of aid" has described how people and the community could or could not get the benefits from aid. Despite the good intention of it, its benefits were mixed. In some ways, people as beneficiaries of the aid experienced positivity out of it. The aid in its most visible form: relocation to the new housing complex, brought some degree of safety because of its location that aimed at getting people away from the disaster risk. Also, the new housing complex brought physical proximity because of its compactness in terms of physical environment. In addition, within its compactness it allowed some degree of neat arrangement. Last but not least, for some people who prior to the disaster were at a disadvantage in terms of property ownership, the aid was a gift as it addressed the land tenure issue.

Nevertheless, people also experienced some downsides as the aid had its pitfalls. People failed to get the most out of it. As revealed in the previous theme, people got less benefit from the new housing that was brought to them by the aid. Not only did they live in a much smaller space, but also they had no space for production integrated into space for living. As the result of this and the need for livelihood, it impacted on the dynamic of social relations because people were preoccupied with making money to support their families and to sustain their lives.

The relocation also disrupted or disturbed the social network of the community in the case of not all members of the community being relocated to the same relocation site. Disruption or disturbance of social network occurred especially in the case of

respected elders who did not relocate to the same location, which impacted on the way community experienced the community decision-making process. The disruption or disturbance of social network was exacerbated by the aid in the form of group-based income generating activities, which was believed to be helpful in the short run but in the long run impaired community cohesion.

The disruption or disturbance of social network exacerbated by the aid, therefore, appeared to be disrupting sense of community further and, eventually, social capital. In this regard, the aid brought in more to the physical aspects of disaster and disaster recovery, rather than the social aspects of disaster and disaster recovery.

Coordination and needs assessment that underpinned the delivery of aid were noticed as not as adequate as they should be. As a consequence, the inadequate coordination and needs assessment impeded people from deriving full benefit from the aid. All in all, the phrase '*relokasi adalah pilihan yang aman tetapi tidak nyaman*' (*relocation brought safety but not comfort*) seemed to represent the extent people and community benefitted from or were disadvantaged by the aid that flowed in.

5.2.4 Centring '*gotong royong*' as a key to community recovery

The eruption destroyed houses and devastated livelihoods. The displacement that followed it disrupted the community's life including sense of community. Provision of housing and restoration of livelihoods were important as rebuilding a sense of community was crucial. Across different informants in this study, both women and men conveyed how they valued '*gotong royong*' (mutual assistance) as of great importance to the community's life before being displaced. It enhanced the cohesiveness of the community. A female community member described:

Di sana itu malah deket sama tetangga. Kalau di sana, kalau di Kinahrejo mungkin malah lebih, lebih apa ya, lebih guyub sih iya, tapi kan kalau dulu itu kan banyak gotong royongnya kalau di Kinahrejo.

In fact, there we were closer to each other as neighbours. At Kinahrejo (name of the village of origin) it was more, what was it, well yes it was more cohesive. That's because in the past we had done many 'gotong royong' in Kinahrejo.

For young generations, one of the greatest significance of '*gotong royong*' was as a relational medium for inter-generation interactions. It opened up the opportunity for inter-generation interactions between the elders and young people. It had the significance of relational experiences where younger generations could listen to stories and learned wisdoms from older generations. A male youth leader revealed:

Kalo saya senengnya yang kerja bakti [dulu] setiap minggu di RT saya [karena] jadi, bukan sekedar kerja bakti. Jadi di sana tuh ngelihat orang-orang tua menceritakan masa lalunya, itu asik. Di sini udah... di sini nggak ada lagi.

For me, I liked it very much *gotong royong* in my village [in the past] we held it once a week. We did not only work, the elders would tell stories of their past. I loved it. While in here... it does not happen anymore here.

Similarly, another young person revealed that it was a moment worth waiting for.

He said:

Ditunggu-tunggu. Kan kesempatan sawung, ketemu. Suka tukar kaweruh [dengan generasi tua].

It is worth waiting for. It is the opportunity to get together, to meet with people. For '*tukar kaweruh*' (exchange visions – with the older generation).

Another female community member who was known as a community activist pointed out that '*gotong royong*' demonstrated a sense of sisterhood/brotherhood in the community. Referring to the way it was practised in the village of origin, she revealed:

Setiap seminggu sekali, Setu Minggu yo, sudah ada ini, sistem bersih-bersih dusun itu. Kan banyak pepohonan, pasti kotor. Terus satu minggu sekali itu nanti dihalo-halo di mesjid, ngumpul, gotong royong, ayo nyapu, di blok-blok sendiri. Misalnya di jalannya blok 1, itu sampai sini, itu kelompok 1. Terus nanti gantian itu per minggu gantian. Terus pokoknya kita sudah seperti apa ya...rasa persaudaraanya, seperti apa..., merasa di dusun itu ayem tentrem.

Once a week, on Saturday and Sunday, there had been this, the village cleaning system. There were many trees, which caused the neighbourhood to be dirty [because of fallen leaves and tree branches]. Then once a week it was announced by using the mosque's loudspeaker, for gathering, '*gotong royong*', sweeping on our blocks. For instance, in the street of block 1, until this distance, is the first group to do it. Every week we changed the turn.

Generally speaking, we were like what... we were in a great sense of brotherhood/sisterhood. I felt like in the village was peaceful.

It was through '*gotong royong*' that a sense of social harmony was achieved. Once one experienced it then *tentrem* (peaceful, in Javanese), as the highest value in the Javanese philosophy of life (Danziger, 1960; Murtisari, 2013) was achievable. Hence, '*gotong royong*' was instrumental both for achieving peace at the individual level as well as social harmony at the community level.

'*Gotong royong*' represented that members of the community caring about each other, caring about community needs and problems. It showed a degree of intimacy with others and solidarity. It reflected '*handarbeni*' or sense of belonging to the community. Referring to the current state of '*gotong royong*' in the relocation site a community member conveyed his observation:

Handarbeni-nya itu kan sudah mulai berkurang. Justru sekarang itu kan, kalo kita ngomong kerja bakti nggarap di atas, gitu ya, di bekas perkampungan kita. Mungkin bisa jadi ada yang berpikiran “gek opo susah-susah mikirin duwur, karena sudah tidak layak dihuni sehingga kita jual”. Sehingga tidak punya rasa mempunyai itu tadi handarbeni, sehingga ketika “yuk gotong royong’ itu” “auk sesuk ora sobo kono meneh kok, lha wong lahanku wis tak dol”. Gitu. Sebetulnya itu suatu permasalahan yang cukup berbahaya ketika ini dikaitkan dengan membangun pola gotong royong yang full power. Pokoknya intinya itu kan.

'*Handarbeni*' has weakened. When there is a need to do some repairs in the old village up there, it seems like some people have the thought “why all the

trouble? I can't live there anymore, so I will sell the place". The sense of 'handarbeni' is not there. So when they are invited to do 'gotong royong', they might respond: "I don't live there anymore. I have sold my land". Like that. This is a dangerous problem when we associate it with how to build the pattern of gotong royong in full power. That's the point.

'Gotong royong', which literally means to lift together and consists of a set of practices that involve the spontaneity and selflessness of participation, was essentially a symbol of communal activity. 'Gotong royong' was an important aspect of living in a rural area. So, it can be said it represented what Tönnies (1957) called *Gemeinschaft*. It characterised village life. A head of village described it as a social characteristic that distinguished rural living from urban living.

Jane wong deso ro wong kota ki sing paling bedo mung siji, Mas, nek auk ngarani Mas. Satu, anu Mas, komunikasine wong ndeso luwih gampang. Kedua, wong ndeso ki kegotongroyongane masih kental. Iya, jadi kalo yang membedakan hanya satu dua aja, Mas. Kompak karo 'gotong-royong', Mas, yang membedakan hanya itu. Iya, cirinya orang desa itu.

Actually the difference between villagers and city people is mostly just one, if according to me. First, the villagers' communication is easier. Second, the villagers' *kegotongroyongan* (mutual assistanceship) is still very strong. Yes, so things that make difference are just one or two. Cohesive and 'gotong-royong', those make the difference. That's the characteristic of people in the village.

Most of the time, when signifying the importance of ‘*gotong royong*’, people made comparison between the experience of it in the village of origin and in the relocation site. ‘*Gotong royong*’ was seen as an indicator of rebuilt sense of community in the relocation site. Moreover, it was indicative of community recovery post-disaster. A number of community members described:

Kalo dulu di atas tuh lebih rame, karena kita keluar nih seneng, gitu lho. Kita keluar rumah tuh seneng dengan jarak. Kalo sekarang kan jarak pendek-pendek tapi justru dapetin orang tiap saat di rumah tuh susah. Paling wong wedok-wedok semua... Nah itu. jadi untuk membangun interaksi ini lebih hidup untuk membuahkkan inspirasi itu susah. Karena lebih ke arah kumpulan itu warga menerima sebuah informasi dari siapa, trus selesai. Jadi tidak urusan mengupas masalah, trus mau apa, kapan. Nggak seperti dulu. Kalo dulu kan banyak masalah juga sih kalo di atas. Banyak masalah yang ini harus kita tanganin. Kalo sekarang kan di relokasi ini seolah-olah fasilitas... fasilitasnya kayak-kayak sudah ada gitu. Masjid kita nggak usah bangun. Ho oh toh? Kalo dulu kan bangun masjid harus gotong royong. Harus. Mungkin bahkan cari danane piye bagaimana nih. Sekarang masjid nggak usah bangun, kemudian jalan sudah bagus, selokan sudah bagus. Paling cuma bersih-bersih. Jadi, ketemu warga ini dipersempit dengan ini urusannya apa, lebih fokus ke satu masalah thok sehingga jarang ketemu.

Back then, it was lively up there because when we went out of the house we felt good. We were happy with the distance. Now the distance is short, but still it is difficult to find people at home. Mostly there are all women at home. So, it is difficult to build this interaction back into life to create an

inspiration. What we have now is just information that flows and that's it. We don't analyse problems, discuss what to do, when to do it. We also had many problems in our former place, problems that we had to solve. Here in this place, it is as if those facilities.... those facilities already exist. We don't have to build the mosque; it's built for us already. Right? In the past, to have a mosque what we did was gotong royong. Together we solved how to raise funds in any way we could. Now, here the mosque had been built for us, the roads, the drain are well built already. What's left for us is merely to do the cleaning. Our chance to meet others has been limited to focus on only one single matter.

Saya rasa dari setelah erupsi Merapi 2010 semua bencana itu sudah tertangani lah...dari macem-macem, hanya satu [yang belum tertangani]. Ya itu tadi, masalah sosial, perubahan sosial tadi. Karna saya rasa, untuk di huntap itu jarang ada kegiatan bersama juga seperti yang dilakukan di kampung. Misalnya, neng kampung kan dikit-dikit, eh kumpulan iki, oh gotong royong iki. Apa saiki gotong royong ada? Nggak ada. Yang mau digotongroyongin apa? Beda. Kalo di kampung kan, resik-resik lho ngono rumpute wis dowo-dowo. Kae ngeduk parit lho. Seperti itu. Dan gotong royongpun nanti juga akan hilang.

I think that after the 2010 Merapi eruption, all regarding disaster was taken care of, except only one [that not]. As I mentioned it, the social problem, that's social change. Because I think people in permanent relocation don't gather as often as in kampong. For instance, in kampong we frequently got

together for any reason, for gotong royong. Do we still do gotong royong?
No. What's left there for us doing gotong royong? It's different. In
kampong, we can clean up when the grass grows tall, or dig to make ditch.
Like that. And I suspect gotong royong will then gradually disappear.

Summary

The theme “centring ‘*gotong royong*’ as a key to community recovery” has pointed out the centrality of ‘*gotong royong*’ not only as an essential feature of rural living on the slopes of Merapi, but also a mechanism of social harmony. It reflected an ideal through which personal peace (‘*tentrem*’ – the highest value in the Javanese philosophy of life), can be achieved from harmonious social life. The practice of ‘*gotong royong*’ represented the intermixture between cultural meaning and sense of community. ‘*Gotong royong*’ is the practice that characterised sense of community and community cohesiveness in the community life before the relocation because of its relational significance. In the relocation, ‘*gotong royong*’ was not only being romanticised, but more importantly, aspired as a practice that would bring in community recovery post-disaster. ‘*Gotong royong*’ pointed out that culture and sense of community, and how culture and sense of community intermingle, are important for community recovery post-disaster.

Chapter 6

Discussion

This chapter is divided into five parts. First, to set the tone for the discussion, this chapter will begin by briefly discussing the state of psychological studies into disaster and post-disaster. Second, this chapter will discuss the themes presented in the Results chapter as to how they are situated in the literature reviewed. This chapter will also discuss the plausible overarching theme that pulled together the four themes. Third, based on the discussion in the second part of this chapter, recommendations for post-disaster community recovery will be set forth. Fourth, the limitations of the present study and the direction for future study will be presented. Fifth is the conclusion.

6.1 Psychological studies into disaster and post-disaster

Psychological studies into disasters typically frame disaster as a traumatic event (McFarlane & Norris, 2006; Neria, Nandi, & Galea, 2008). Moreover, psychological studies on the impacts of disaster and post-disaster recovery have mostly emphasised mental health-related outcomes and interventions (Bonnano et al., 2010; McFarlane, van Hooff, & Goodhew, 2009). This situation puts psychological studies into disasters mainly focusing on individual psychological functioning (see Kaniasty, 2012; Kaniasty & Norris, 1999; Ruiz & Hernandez, 2014) as to how survivors cope with stress and trauma. Unsurprisingly, many of the published psychological studies have limited their focus to trauma reactions, with post-traumatic stress disorder (PTSD) as the most commonly investigated psychological problem (Neria et al., 2008). Furthermore, psychological studies into disasters have a tendency to view the impacts

of disaster as a largely quantitative matter (Palinkas, 2006); as such they are usually enumerated in health-related terms such as morbidity and mortality rates, trauma incidence, prevalence, severity and ceiling level (Bonnano et al., 2010; Neria et al., 2008).

To date, there are a few studies of disaster and disaster recovery within or using the framework of community psychology (e.g., Binder, Baker, Mayer, & O'Donnell, 2014; Cox & Perry, 2011; Li et al., 2011). The present study aimed to conduct a community psychological study. Therefore, the present study was guided by the tenets of community psychology on the interdependence of individuals and the social contexts in which they are embedded.

To conduct a community psychological study implies that the present study emphasises a community-level perspective on understanding and responding to the multiple effects of disasters (Trickett, 2009). To this end, as the contexts of diversity and the diversity of contexts matter for community psychology studies (Trickett, 1996), the present study follows the call for highlighting local culture and cultural history as crucial to understanding people in context (Trickett, 2011). In so doing, the present study emphasises how culture came into play as the community experienced permanent relocation.

The present study sought to understand how culture operates in experiences of being relocated permanently. In addition, the present study sought to understand the interconnection of culture, sense of community, connection to place, and community recovery as the community experienced changes following the disaster. By pointing out community recovery, therefore, the present study focuses on community functioning rather than individual psychological functioning post-disaster.

The present study employed a qualitative approach because of the exploratory importance of qualitative study into disaster impact and recovery (Palinkas, 2006). This approach allows a rigorous description and explanation in regard to subjective and lived experience of individuals and community in their social settings. Also, it can provide insights into a wide range of individual and community experiences pre, during, and post disaster (Phillips, 2014). Moreover, conducting qualitative research allows a researcher to conduct studies in the manner that is adaptive to complex and fast changing environment (Phillips, 2014) and to the chaotic context of disaster (Bonnano et al., 2010).

6.2 On “embracing the volcano for living one’s life”

According to the Oxford Dictionary of English the meaning of the word “embrace” is to accept something willingly and enthusiastically (a verb) or an act of accepting something willingly or enthusiastically (a noun). By all means, that is what is conveyed in the phrase “embracing the volcano for living one’s life”. People accepted Merapi willingly and enthusiastically into their life. And it was not merely individuals who accepted Merapi willingly and enthusiastically into their life, but it was the community at large that accepted it because Merapi indiscriminately influenced people’s lives. So then, a question can be posed, what made, or why did, people accept willingly and enthusiastically Merapi into their life?

Merapi brought influences in a meaningful way. So, Merapi in itself was meaningful. Merapi carried meanings that people acknowledged in many ways from the way mystical belief about Merapi was retained and the way they held ceremonies and conducted practices to the way stories including utterances about Merapi brought in the life of the community. The way Merapi carried meanings and was meaningful

for people is in line with Geertz (1973) conception of culture. Merapi was a symbol, one that was shared by and shaped the ways members of the community saw, felt, and thought. Merapi as a symbol shaped people's action and thus, characterised the life of the community.

Merapi carried more meanings than as a volcano. Merapi was not merely the physical reality of a volcano. As per what Geertz (1973) called "the operations of culture", the symbolic nature of Merapi led people to perform certain practical operations in the social process (Ortner, 1984). From its mysticism, which centred in the Javanese worldview that was then appropriated into people's belief systems and the way people carried out practices to live their life from generation to generation, Merapi came into existence as a public, social symbol where a historically transmitted pattern of meanings was embodied (Geertz, 1973) in it.

Several studies into communities in Merapi (e.g. Donovan, 2010; Lavigne et al., 2008; Mei et al., 2013) note the presence of cultural elements that shape disaster subcultures (Weller & Wenger, 1973) against the volcanic hazard of Merapi. Nevertheless, these studies recount the subcultures, which comprise myths, legends, and ceremonies that enhance an attachment to village of origin (Lavigne et al., 2008) as vulnerability factors. As shown by these studies, the existence of subcultures is associated with the communities' behavioural responses mostly at the time of emergency. They influenced the community in responding to warnings and evacuation orders. Such disaster subcultures that represent the connection of people to Merapi appeared in these studies to be viewed as handicapping because they enhanced an attachment to village of origin, and they increased a reluctance to evacuate (Lavigne et al., 2008; Mei et al., 2013).

In contrast to the aforementioned studies, the present study found that what people held as myths, legends, and ceremonies in relation to Merapi were not merely disaster subcultures. They were symbols of the way people embraced Merapi. As Geertz (1973) contended, culture operates through symbols. They were symbols of the operation of a culture, Merapi culture. As expressed in the phrase from an informant of the present study “*Merapi people’s soul is Merapi*”, Merapi culture was indeed the culture of people of Merapi. It was the culture of those who live in the slopes of Merapi who embraced Merapi as something resourceful, familiar, and even alive to them. Merapi was meaningful within people’s day-to-day life. Its meanings were transmitted historically in the course of the life of the community. This is consistent with Dove (2008) who pointed out that people living in Merapi intimately engaged with Merapi on a daily basis through their spiritual and agro-ecological routines and such engagement was continually evolving.

Merapi’s eruptive moments were only one part of its full life cycle alongside people who lived through its non-eruptive and eruptive moments. People embraced Merapi throughout their life and both Merapi’s non-eruptive and eruptive moments. They incorporated the Javanese worldview and mysticism about Merapi into their belief system as an interpretive framework for their daily life. They also performed ceremonies and farming practices that followed and went together with the Merapi ecological environment. The way people embraced Merapi as an important aspect of their way of life was in line with Thompson (1990) suggestion that culture as meanings embodied in symbols can be found in meaningful objects of various kinds as well as in the pattern of actions and utterances in the course of daily life.

People embraced Merapi into their life, so their views about Merapi were distinctive. It is possible that their view about Merapi is different from scientists or the

government who likely view it as posing hazards or risks, or from people outside Merapi who view it posing a perilous danger. To this point, Merapi presented different meanings for different group of people (e.g., a group of scientists, a group of 'non-Merapi' people). The way people of Merapi had a distinctive view about Merapi, which was different from others, finds its relevance in the assertion from Strauss and Quinn (1997) who pointed out that meanings are produced through the interaction of individuals' mental structures and relatively stable events in the public world. Meanings are cultural. Meanings are interpretations that coincide with the world as it is experienced by people. This assertion suggests that meanings arise in a given individual and a group of people who share a way of life. This implies that a different interpretation is invoked by a different characteristic of life that people experience.

The embracing view and behaviour toward Merapi that people showed was cultural. A significant cultural meaning of Merapi was produced through engagement with an interpretive framework that stemmed from the Javanese worldview and direct daily experience with Merapi. As put forward by Keesing (1974), culture indicated not only the adaptation that people take against and within their natural environment, but also the interpretation that people make on their relations with their natural environment. In addition to the meaning creation and absorption as in the symbolic notion of culture (Geertz, 1973; Schneider, 1980), culture is a cognitive system (Goodenough, 1961; Goodenough, 1981) that consists of standards for defining what is, what can be, what one feels about it, what to do about it, and how to go about doing it. In this regard, the embracing view and behaviour toward Merapi represented a system of knowledge that was acquired through hands-on experience and evolved over time.

The embracing view and behaviour toward Merapi that spanned Merapi's cycle – non-eruptive and eruptive moments – as well as people's life cycles, was consistent with the findings from Warsini, Mills, West, and Usher (2016) that suggested the existential temporality and relationality of people living in Merapi emerged from pre-eruption connectivity, during eruption disconnection, and post-eruption reconnection. Moreover, this is in line with the arguments from Dove (2008) that stated the volcanic hazard of Merapi was 'domesticated', familiarised, or naturalised by the system of religious belief and system of agro-ecological practices that were developed by people living in Merapi; whereas, the government exoticised, technologised, and focused on periods of hazard. In this regard, the eruption itself was not as destructive as the relocation with regard to the meaning of Merapi that has rendered an enduring and adaptive relationship between people and their ecological environment.

6.3 On “losing an integrated lived space, losing the meaning of place”

As presented in the previous theme, the relationship that people had with Merapi was an intimate engagement on a daily basis. Within such engagement, people adapted and lived productively through a distinctive agro-ecological pattern of activity. The ecological characteristic of the engagement implied that it involved the notion of place. Place was not simply location. As pointed out by Tuan (1979), place has more substance than location. It is a unique entity, a special ensemble, has history and meaning. People's experiences and aspirations are embodied in it. Therefore, place needs to be understood from the perspectives of people who have given it meaning (Tuan, 1979), especially because the meaning of place most often appears to be unspoken (Rodman, 1992).

So, it is quite clear now that the presence of the term “relocation” primarily within the lexicon of disaster management practice is more of what is seen (or defined) by disaster management specialists or crisis managers, that following a disaster in a location, a community needs to move to a new location. As a consequence, seeing it merely as an issue of location could mean the community’s experiences and aspirations are left untapped. As Rodman (1992) warns, that place too often is subsumed as part of the problem of voice: the present theme to a greater extent tapped the voice of community on their relationships with place. The voice in this study was not merely aspirations or demands for livelihood that were once taken away by the disaster and not provided in the new location, the relocation site. The voice represented the narratives of place making (Tuan, 1991) that indicated the construction and maintenance of meaning of place. The voice was eventually related to the role of place in the disaster recovery process (Cox & Perry, 2011).

Before relocation, people had an enduring relationship with their ecological environment. The relationship was adaptive, productive, and culturally shaped by the symbolic notion of Merapi. The 2010 eruption, which precipitated the relocation, was not the first eruption or eruptive moment that they experienced. Before the 2010 eruption, they experienced eruptive moments that idiosyncratically rendered their relationship with the ecological environment they lived. In the mystical realm about Merapi, which also rendered people’s relationships with their ecological environment, they created a sense of understanding, belongingness and at-homeness and transformed their physical world into place (Cox & Holmes, 2000). The present theme suggests that people held meaning of place through what they developed as a system of religious belief and a system of agro-ecological practices to naturalise the volcanic hazard (Dove, 2008).

The system of agro-ecological practices represented an evolved place making. These are patterned practices representing a meaning-laden, enduring relationship with Merapi. The present study shows that symbolic meanings of a place not merely come out of how threatening/non-threatening (Virden & Walker, 1999) or sacred (Mazumdar & Mazumdar, 2004) the place is perceived to be, but more importantly come out of a patterned practice in people's lived space. Through a patterned practice, people developed connection or attachment to place (Altman & Low, 1992). People developed it through the physical rootedness to place formed by the patterned practice, which was inseparably shaped by the symbolic meaning of Merapi.

The patterned practice, which characterised people's attachment to place, was consistent with the notion of practice as culture in action (Swidler, 1986). Culture is in practices that are organised according to certain system of meanings and which are understood as routine activities (Swidler, 2001). The present theme suggests the practice from which people developed place attachment was the integration of space for living and space for production within one's lived place. The practice consisted of strategies of action and it required internalised habits, skills, and styles (Swidler, 1995, 2001) and required material objects that were necessary components of practice (Reckwitz, 2002). In reference to Swidler's (1986) theory, the practice of integrating space for living and space for production (house, yard, and farmland as an integrated lived space) required habits, skills, and styles that are passed on and learned from generation to generation. Habits, skills, and styles were internalised and, among many others, can be found in the way people opened and cleared the land and the rituals that followed, the way they built houses, the way they transformed the style of farming from swidden farming to permanent farming, and the way they blended daily household and production activities.

The present theme suggests the integrated lived space was at the heart of people's attachment to place. The integrated lived space was a patterned practice where people's relationship with the ecological environment was imbued with meaning. The integrated lived space was the way people became productive and adaptive within their ecological environment. It was the way they experienced enduring and adaptive interactions with Merapi.

The present study points out the cultural construction of place attachment. The practice of integrating space for living and space for production was conducted by following a socially standardised way of understanding and knowing (Reckwitz, 2002). In the practice of integrating space for living and space for production people carried out daily activities that became a smooth blend of household and production practices. In this way, people's patterned practices were shaped by a way of understanding and knowing constituted by culture both as pattern of meanings embodied in symbols (Geertz, 1973) and practice (Swidler, 1986).

The present theme suggests place attachment operates not only at an individual level, but also at the group level (Low, 1992; Scannell & Gifford, 2010). Place attachment at the group level is constituted by shared symbolic meanings of a place and by habits, skills, and styles that community at large develop out of the patterned practice. Equally important, it stems from social bonding (Riger & Lavrakas, 1981) that is rooted in social relations from which the meaning of place are constructed. The present study suggests social bonding was constructed from a broad sense of social relations and social relations closely related to people's agro-ecological practices, as when one informant of the present study once said, "*In the past, we could go to the farm together, we met up on the way*". As Milligan (1998) pointed out, place attachment stems from meaning of place constructed through common experiences of

individuals who create a mutually shared interaction and through expectations for interaction.

The present theme corresponds to Riley (1992), who pointed out human experience distinctively matters in place attachment. According to Riley (1992), people attach to a place where routine, everyday human experience and activity occur. Home is the most essential element in shaping people's experiences. Home is a key point in people's orientation to space and time through which people make a connection to the larger world (Fullilove & Fullilove, 2000). The present theme suggests that people's attachment to place was shaped by people's routines, everyday experiences and activities that occurred in the home and its extended area (yard and farm), which formed an integrated place for these to occur. Through routine, everyday experience and activity within such an integrated place, people situated and extended their connection with their broader ecological environment and eventually with Merapi.

The present theme suggests that relocation did not merely disrupt people's livelihood. It substantially disrupted people's attachment to place that was both ecologically and culturally meaningful. The present theme corroborates what Berdoulay (1989) put forward as lived space that includes living space (territory, activity areas), social space, and the values attached to both. Relocation firstly disrupted people's place attachment (Brown & Perkins, 1992; Fullilove, 1996) because it disconnected people from the old place. The new place, however, disrupted it further because it did not provide people with a fit lived space (Berdoulay, 1989). There was only housing and no integration of space for living and space for production whatsoever. Furthermore, the present theme suggests when people made a comparison between before relocation and after relocation it reflected the salience of

place attachment during displacement and the function of place attachment for continuity over time (Fried, 2000; Twigger-Ross & Uzzell, 1996).

The present theme clearly points out that physical rootedness in the new place remained lacking. Relocation could not create (or re-create) meaning of place because it did not provide people with such integrated lived space. Therefore, not only did relocation disrupt people's place attachment to old place, but also it unsettled the meaning of place in relocation. The present theme is in line with Cox and Holmes (2000), who suggested that people aim to reconstruct their lived space following a disaster to move toward healing. In the present study, people unfortunately encountered a new lived space where living space or activity areas were substantially reduced. The new lived space was without space for production, which made it difficult to recover meaning of place as it was or as expected. The present theme touches what Manzo (2005) called lived experienced of place. According to this concept, a place becomes meaningful through the steady accretion of experiences in place. Meaning of place is constructed as people collect experiences in place. In the place before relocation, people held meaning of place as they experienced daily lives that were adaptive, productive, and meaningful. The reduced lived space in the new location brought about a substantial impact on the lived experience of place. As a result, people found it difficult to find meaning in the new place, the reduced new place.

The present theme corroborates Cox and Perry's (2011) study that suggested post-disaster recovery as the reorientation process navigated by the critical importance of place. Home is the most significant place that guides the reorientation process. The significance of home is beyond its narrow material and economic narratives. Home is of greatest significance with its meaning as shelter, symbolic extension of self,

meaningful livelihood, and a locale of social relations and community (Cox & Perry, 2011). Translated into the present theme, relocation hindered the reorientation process post-disaster because relocation could only provide housing. As a consequence, in relocation not only did people hardly find meaning of place, but also they could be entrapped by a prolonged sense of disorientation.

A notable study by Cox and Holmes (2000) pointed out that individual healing from disaster can be achieved by regaining sense of place through the personal celebration of nature. Personal celebration of nature is a phenomenological act to cultivate a new perception of nature after it has been altered by disasters. This implies that regaining sense of place through personal celebration of nature is immensely personal. Warsini et al. (2014) are among the few who investigated people-place relationships in the aftermath of the 2010 eruption of Merapi. Using the concept of solastalgia (Albrecht, 2005; Albrecht et al., 2007), a place-based pain and distress caused by physical desolation or the loss of home, Warsini et al. (2014) suggested that people suffered from solastalgia as they lose materially (housing, livestock, and farmland). The losses pose a challenge to people's established sense of place and identity and can induce feelings of helplessness and depression.

Taken together, the studies mentioned above (Cox & Holmes, 2000; Warsini et al., 2014) are too focused on sense of place in which the role of place in disaster recovery is pertinent to the affective component of place. Too focused on people's emotions can be potentially too individualistic. It also can be over-pathologising, for example in the use of term 'nostalgia' (Fullilove, 1996; Milligan, 2003) and 'solastalgia' (Albrecht et al., 2007) as forms of psychiatric implications of displacement post-disaster. In contrast, the present theme points out that the pertinence of place in disaster recovery is related to meaning of place. Meaning of

place is not merely a matter of individual feeling. Rather, it is a shared feeling of connection to place because it involves social and cultural processes (Low, 1992; Scannell & Gifford, 2010). Moreover, the issues pertaining to the meaning of place in post-disaster recovery and relocation are not always a matter of psychological symptoms. The present study was not a clinical psychology study nor intended to assess psychological functioning to avoid individualising and privatising collective dislocation of community (Boen & Jigyasu, 2005; Cox & Perry, 2011); notwithstanding, the present study suggests that the full account of people's experiences with place cannot be simply understood through mere clinical categorisation of individual feeling.

If people's experience with place need to be individualised, the present study suggests that humans' emotional bonding to places are a manifestation of an existential state of insideness or outsideness (Relph, 1976). Insideness occurs when a place is closely experienced and resulted in people feeling they belong to and identify themselves with place, whereas outsideness occurs when people experience separation and feel alienated from place. Framed in the present theme, people connected to place before relocation because they felt profound inside that place, safe, enclosed and at ease. Meanwhile, relocation brought people to experience existential outsideness, a sense of strangeness or disconnection to place.

Sense of insideness preserves one's sense of identity (Rowles, 1983), so too place attachment entails place identity. The present theme suggests that agro-ecological practices and cultural meanings, embedded in such practices and social interaction in the community, developed people's attachment to place and their place identity. Concurring with the idea of Hull et al. (1994); Rowles (1983); Stedman (2002), the people in the present study developed their identification with place as their

experiences with place were imbued with meaning. To construct place-based identity, they needed more than to experience and record their physical environment. They needed to find instrumental properties of place for the satisfaction of their biological, psychological, social, and cultural needs (Proshansky et al., 1983). The present theme suggests that place before relocation maintained people's attachment and place identity through the integrated lived space and agro-ecological practices that were both meaningful and essential for sustaining their life. Relocation adversely affected people's lived space and agro-ecological practices. As a consequence, relocation disrupted people's attachment and place-based identity.

The present study suggests that satisfaction of needs is one thing. The other thing is that both people's attachment to place and place identity do not merely emerge from a 'selfish' orientation to satisfy needs, but more importantly from adaptive ecological interactions. It is adaptive ecological interactions because it shows people exploit resources efficiently and deal with environmental challenges effectively (Oliver-Smith, 1999). Culture, as in people's worldview and beliefs about Merapi and agro-ecological practices, was a key in making ecological interactions between people and environment adaptive. The government's decision for relocation showed not only the government's tendency to exoticise, technologise, and focus on periods of hazard, but also showed that what may be adaptive for one community may be seen as maladaptive by others (Oliver-Smith, 1999). Relocation was hardly acknowledged as adaptational strategy by the community. Rather, it was an imposed intervention that caused the disruption of people's place attachment and place identity.

Fried (2000) put forward that place attachment is an indicator of community functioning. Positive community functioning will result in social bonding and subsequently enhance place attachment. In the present study, relocation brought a

lower social bonding, which was apparent in the way people described community functioning as being not as smooth as before relocation. Among the reasons were that some of the respected elders did not live with them anymore, which affected the decision making process, and the community lacked ongoing practice in '*gotong royong*' (mutual assistance).

The present theme shows that place attachment is closely related to sense of community (Brown & Perkins, 1992; Long & Perkins, 2007; Perkins & Long, 2002; Pretty, 2002). People's attachment to place was established from attachment physical rootedness and social bonding (Riger & Lavrakas, 1981). The present theme suggests that meaning of place was constituted from social relations both as part of daily interactions related to agro-ecological practices, where people interacted with neighbours during farming activity, and culturally shaped interactions such as in '*gotong royong*' (mutual assistance). People related their social bonding with the old place in the way social interactions were attached to their agro-ecological practices such as when they went together with neighbours to farmlands, when they went together to cut grasses, or when they could share vegetables and fruits from their yards with neighbours. Moreover, a strong social bonding was developed through culturally shaped community activity such as '*gotong royong*'. The present study found that relocation significantly affecting sense of community as it essentially provided only housing. Relocation reconstructed meaning in people's lived space only in a limited way. As a consequence, relocation ruptured the social and cultural contexts in which community meaningfully lived their lives (Oliver-Smith, 2011).

6.4 On “benefits and disadvantages of aid”

The present study suggests that aid impacted on the community in both positive and negative ways. In some ways, people benefited from various assistance brought in by aid (e.g., basic supplies during the emergency, temporary and permanent housing, economic empowerment). Nevertheless, people were disadvantaged by aid one way or the other. As profoundly revealed in the present study, aid in the form of permanent relocation housing posed challenges for families and the community. It obscured the overall benefit of aid and created longer-term unfavourable impacts for the community. This situation is not unique to the present study. There are studies that have documented how external aid, for varied reasons, hindered communities from gaining the full benefit out of it (Baird & Shoemaker, 2007; Berke, Chuenpagdee, Juntarashote, & Chang, 2008; Binder & Baker, 2016; Pelupessy, Ride, & Bretherton, 2011).

Many of the existing psychological studies into disaster aid focused on social support (see Norris et al., 2008), which declined or deteriorated as a result of violated expectations of aid (Kaniasty & Norris, 2004), misrepresentations and abuses of aid (Norris, Baker, Murphy, & Kaniasty, 2005), or dissatisfaction with aid (Kaniasty, 2012). The present study provides evidence that aid indirectly deteriorated social support that used to be working. Putting it into perspective, it induced the deterioration of a previously supportive community (Cline et al., 2010).

The present study has relevance with Hobfoll (2011, 2012) who argued power, status, and privilege are influential for accessing material goods and social support in the way aid is delivered to support people’s coping, adaptation, and wellbeing post disaster. Hobfoll (2011) put forward the construct of caravan passageways as “the environmental conditions that support, foster, enrich, and protect the resources of

individuals, families and organizations; or that detract, undermine, obstruct, or impoverish people's resource reservoirs" (p. 129). Power, status, and privilege are resources that are valued in their own right or act as means to the possession or protection of valued resources. Power, status, and privilege are likely being reproduced in the process of coping with or recovery from disaster (Schwarz, 2014a). They influence people's environmental conditions for fostering the accumulation of resources. Aid both establishes and de-establishes such environmental conditions. Aid influences whether individuals and communities' resources will remain intact, elevated, or depleted. Unfortunately, people in the present research weighed it as more de-establishing because it detracted, undermined, obstructed, or impoverished people's resource reservoirs – people's lived space.

The present study also has relevance to the study by Schwarz (2014a) who employed a cultural psychology approach. Schwarz's study, was sited in Yogyakarta – similar to the present study – but in the context of the 2006 earthquake, found that the material characteristic of aid posed a challenge to the social fabric of the community. Moreover, Schwarz's study found a lack of coordination and monitoring system in the aid distribution as a general source of social discord, disappointment, and resentment. A lack of coordination and monitoring systems in the aid distribution prompted people to evaluate whether the aid distribution was just or not. Fortunately, the socio-cultural meaning of aid attributed by people, for example as God's gift that implied no sense of entitlement for receiving aid, moderated the presence of possible conflicts in the community. This implies a concern revealed in the present study that the merit of aid did not depend solely on its altruistic intention. Rather, it depended on the extent it was well managed and supporting community cohesion.

Aid is not always positive or positively experienced. This is in part because of what the present study found, that the judgments of what, when, how, and why aid was delivered or distributed was predominantly at the aid providers' calls. This confirms what Evangelidis and Van den Bergh (2013) suggested, that aid can be misallocated. Aid misallocation occurs because decisions and actions for distributing aid are too often based on what matters to aid providers rather than aid recipients. Subsequently, it can hamper the sustainability of aid (Pelupessy et al., 2011) and eventually lead to frustration and dissatisfaction with aid.

The present study found that, despite being grateful for aid delivered to them, people saw aid preventing them from rebuilding community living that centred in the practice of *gotong royong* (mutual assistance). In this regard, this study shared the same findings with Schwarz (2014a) that the feelings of being in harmony and togetherness with others, which could be achieved through practising *gotong royong*, were disrupted by the way aid was delivered. At the very least, it was not the primary focus of aid to leverage cultural norm and practices. This situation, among many others, was a result of a cookie-cutter approach to intervention within the aid package (Pelupessy & Bretherton, 2015).

The present study found that some interventions related to livelihood and housing were a replication of the projects that were implemented by government agencies or non-governmental organisations elsewhere in Indonesia before the 2010 eruption of Merapi volcano, such as in Aceh post the 2004 Indian Ocean tsunami, in West Java post the 2006 tsunami, and in Yogyakarta post the 2006 earthquake (Affan et al., 2015; WB, 2012). An example of the replicated project was REKOMPAK, a community-based reconstruction of houses and community infrastructure funded by donor countries through the World Bank. Although its planned objective was to

facilitate recovery, and evidently people benefited from it, the replication also resulted in some discontent with the processes or the results. Many of the replicated projects claimed they were participatory in nature. Nevertheless, from the observation conducted during the fieldwork, the replicated project in housing left some newly built facilities that were either underutilised (e.g., a children's urban park-like playground) or rather unfamiliar to people who used to live on the rural flanks of Merapi (e.g., fire hydrant).

The present study suggests that post-disaster aid brought the issue of power relations between the community – aid recipients – and aid providers. This assertion follows Fisher, Sonn, and Evans (2007) who summarised that power is constituted within relations between people within broader historical, social, cultural, economic, and political contexts. In this regard, post-disaster aid induced power differentials with regard to who brought and who received aid. The notion of power relations and power differentials between the community and aid providers concurs with Hobfoll (2011, 2012) approach that stated the possession of resources follows possession of power. Aid in itself was a resource, so it was quite apparent that the power of aid providers came from the material characteristic of aid they brought in to the community.

Resources are those things centrally valued by people, and people strive to obtain, retain, foster, and protect them (Hobfoll, 2001). Resources, as argued by Hobfoll (2001) are products of any given culture. Culture puts value on the importance or unimportance of resources. Implied in this way of thinking is culture as a set of abstract values, external to resources. Put in other words, culture is not a resource. In contrast, the present study suggests that culture in itself is a resource. Culture as patterned practices of integrating house, yard, and farmland, of performing daily

routines out of it, and of practising '*gotong royong*' that enhanced social bonding with place was indeed a resource. Culture is not merely values locked inside one's mind and used as standards for valuation of things. Rather, culture as is pertinent to the present study is inherent in the way people live their lives. It is embedded in what people do as day-to-day practice. Culture is a patterned practice operated within a framework of meaning, so it becomes a culturally organised practice (Ortner, 2006). In such patterned practice, not only is culture meaningful but also resourceful.

The permanent relocation severely affected the way people went about the patterned practices of integrating house, yard, and farmland, of performing daily routines out of it, and of practising '*gotong royong*'. People greatly wanted it back. They strived to foster it in their current conditions. Yet, aid did not facilitate it. The present study found that people benefited less from aid because it tended to focus on what the eruption physically did to the community. As one informant of the present study said, "*Even though we live close to each other now, it is not really easy for us to get together often. In the past, we could go to the farm together, we met up on the way... neighbour of mine whose house is back there. Now we only meet on evening prayer*". Aid overlooked what was symbolically meaningful and powerfully resourceful to people and the community.

Post-disaster aid brought in power relations based on material aid possessed by aid providers on the one side and culture upheld by the community on the other side. So, it became aid-based power versus culture-based power because aid had a tendency to neglect that people's culture was powerful. As put forward by Foucault (1980), cultural practices are enactment of power. Cultural practices (or patterned practices) deploy knowledge to constitute human beings as the subjects of the knowledge. That said, people were knowledgeable and had knowledge about what mattered to their life

including future life. Through culture as patterned practices people devised a repertoire or tool kit of skills, habits, and styles (Swidler, 1986). Unfortunately, some aid was not matched with what was culturally needed and fit. The material characteristic of aid merely met physical impacts of the eruption, whereas Merapi itself and its eruption never existed (or was interpreted) solely as a physical realm for people. People could not get the full benefit out of aid because of a different interpretation between aid providers and the community about what was meaningful and resourceful for the recovery.

Psychological study into post-disaster aid and its impacts for beneficiaries remains scarce and largely confined to provision of mental health service (Baisden & Quarantelli, 1981; Morris, 2011) and psychological aid, which is known as psychological first aid (Jacobs & Meyer, 2006; Ruzek, Brymer, Jacobs, & Layne, 2007; Vernberg et al., 2008). The present study provides a deeper understanding of how post-disaster aid impacted on the lived experience (Manzo, 2005) of community that used to be the acting subject (Ortner, 2006), which then became the receiving object of material aid as they were displaced. In this way, the present study is an attempt to answer a call from Schlehe (2010) for not only focusing on the physical aspects as in the Euro-American point of view, but also pointing to the symbolism of disaster and its linkages with all aspects of life and society.

Aid in the form of relocation appeared to be an imposed strategy of adaptation. The government and aid agencies supporting it seemed to see that the community's adaptive ecological interactions were maladaptive or no longer adaptive (see Oliver-Smith, 1999). This implies not only who is 'to blame', but also competing interpretations on the symbolism of disaster. This reflects power relations between those who brought and received aid. Such power relations eventually were expressed

in both the interpretation of disaster and aid delivery. As one informant of the present study said, "*Relocation brought safety but not comfort*": this suggests a discrepancy in the construction of consequences of disaster and their implications for post-disaster recovery.

6.5 On “centring gotong royong as a key for community recovery”

In the present study, to a greater extent people considered that relocation brought disruption to place as a community as to how ‘*gotong royong*’ as an important community practice weakened. On the one hand, the present study suggests consequences of relocation to community fabric. On the other hand, it suggests what is significantly desired, or key, for the recovery of community.

The present study is, first and foremost, consistent with the assertion that ‘*gotong royong*’ is a local wisdom for disaster recovery (Kusumasari & Alam, 2012). As a local wisdom, it encompasses both value and practice. Schwarz (2014b) found the significance of ‘*gotong royong*’ lies in the fact that it manifests the values of harmony and togetherness in the Javanese tradition. Moreover, ‘*gotong royong*’ is the essence of neighbourship (Sullivan, 1991) and philosophy of life that takes the collective as the most important (Bowen, 1986). In its ideal form it “calls up images of social relations in a traditional, smoothly working, harmonious, self-enclosed village on Java, where labour is accomplished through reciprocal exchange, and villagers are motivated by a general ethos of selflessness and concern for the common good” (Bowen, 1986, p. 546).

‘*Gotong royong*’ is also a practice. As a practice, it demonstrates the propensity of an individual to follow norms of engaging in what is regularly done in the community and of being harmonious in working with other people. Through ‘*gotong*

royong' people are being united in carrying out their responsibilities (Schwarz, 2014b). Social capital emerges from '*gotong royong*' (Kusumasari & Alam, 2012). '*Gotong royong*' represents social capital as it demonstrates cooperation within and between social networks. Last but not least, *gotong royong* idealises a community, as appears in Tönnies's (1957) characterisation of *gemeinschaft*.

The present study is consistent with Kusumasari and Alam's (2012) study post the 2006 Yogyakarta earthquake that suggested the success or failure of disaster recovery programs delivered by the local government was influenced by the extent to which '*gotong royong*' as a form of social capital was advocated and incorporated in the programs. Furthermore, the present study concurs with Zaumseil and Prawitasari-Hadiyono's (2015) study – similar to Kusumasari and Alam's, the study was also conducted in the context of the 2006 Yogyakarta earthquake – that pointed out the importance and salience of '*gotong royong*' for people to cope with the disaster. The practice of '*gotong royong*' provides a sense of a strong bond of communal cohesion when a community is threatened by danger. In this regard, '*gotong royong*' becomes functional as a form of social coping. In addition, it is of importance for bringing general feeling of safety and inducing local pride.

The link between social capital and disaster recovery was investigated and corroborated in different contextual settings by previous studies (e.g., Aghabakhshi & Gregor, 2007; Aldrich, 2015; Cox & Perry, 2011; Nakagawa & Shaw, 2004). These studies provided assertions that disasters disrupt the fabric of community life, therefore, social capital is a crucial need (Nakagawa & Shaw, 2004) and to rebuild it is of paramount importance for disaster recovery. It is only quite recently that the pivotal connection between social capital and place was uncovered (Cox & Perry, 2011), recognising place is an important factor in experiences of social capital. This

means that experiences of social capital exist in contexts because the experiences emerge from place as a community. Place as a community represents social relationships that have contextual quality, diversity, and intensity. After all, social capital is an experience that occurs in social relationships that are temporally and spatially located (Cox & Perry, 2011). This suggestion is relevant to the present study because ‘*gotong royong*’ is an idiosyncratic practice that operates culturally within Javanese values and has different types of its exhibition – when and what for (Koentjaraningrat, 1961). The present study suggests that the fundamental connection between social capital and place emerges from social relationships that are not only temporally and spatially located, but also culturally framed.

The salience of social capital for disaster recovery rests on not merely its idiosyncratic nature, but also its function. This is in line with Coleman (1988), one of the key founders of the social capital concept, who argued that social capital is defined by its function. One informant of the present study said, “*Once a week, on Saturday and Sunday, there had been this, the village cleaning system... we were in a great sense of brotherhood/sisterhood. I felt like in the old village was peaceful*”. As reflected in the quote, the present study shows the symbolic function of ‘*gotong royong*’, among many others, for achieving individual-level peace and community-level social harmony. In other words, it is instrumental. It represents social support for communally coping with disaster (Schwarz, 2014b; Zaumseil & Prawitasari-Hadiyono, 2015) in which the equilibrium, individual-level peace and community-level social harmony, can be achieved after a period of perturbation. The present study corroborates Kaniasty (2012) suggestion that post-disaster social support positively influences survivors to achieve social psychological wellbeing. Moreover, the present study is also consistent with the assertion that “greater involvement in the

instantaneous post-disaster altruistic communities would exert a beneficial effect on survivors' subsequent feelings of interpersonal connectedness and trusting attitudes toward others and their community” (Kaniasty, 2012, p. 29).

As presented above, '*gotong royong*' shows local wisdom in practice, social coping and support, and social capital. The present study found that people associated '*gotong royong*' with community functioning at its best. People associated experiences of practicing '*gotong royong*' with sense of belonging to community and sense of togetherness. In many ways, people considered '*gotong royong*' represented the fabric of community life.

In its quality of indicating community functioning, sense of belonging in community, sense of togetherness, and the fabric of community life, the present theme suggests that '*gotong royong*' defines and describes sense of community. The present theme suggests further that the interconnectedness of sense of community, social capital, social coping and support, and local wisdom in '*gotong royong*' points out the primacy of '*gotong royong*' for a contextual community recovery post-disaster. Elsewhere, in contrast to the present study, Rivera (2012) found cultural mechanisms that inhibited social support exchanges among Puerto Ricans in the aftermath of a disaster in the United States. Taking these two studies together, this suggests the distinctiveness of culture that provides a 'script' for community recovery post-disaster. In this regard, the distinctiveness of culture needs to be carefully taken into consideration in planning and implementation of post-disaster recovery interventions or projects.

The present theme, apart from its explanatory significance to understanding community recovery, points out the need for redefining sense of community in the context of community recovery post-disaster. Sense of community is predominantly

referred to as a feeling (see McMillan & Chavis, 1986) and indicates individual perceptions rather than external states (Neal & Neal, 2014). In its most popular theorisation, as McMillan and Chavis (1986) suggested it, the feeling is broken down into elemental parts. In such breaking down, the critical quality of sense of community as experience is potentially vanished (Bess et al., 2002). Against such a backdrop of theoretical conceptualisation, the present study contends for an alternative to McMillan and Chavis's (1986) theory that focus exclusively on the emotional dimension of sense of community (Schwarz, 2014b). As pertinent to '*gotong royong*' as a practice, the present study found the locus of sense of community is practice. Sense of community is a practice that enhances bondedness with community. Sense of community is practice enacted as communal action for achieving the common good. Moreover, theorising sense of community as practice also sets a light in understanding it as process. As found in the present study, sense of community is located in a process where members of community interact, build social support, and contribute to the common good (Bess et al., 2002).

By locating sense of community in practice and as a process that occurs in community, the present study confirms the proposition put forward by Sarason (1974) that sense of community is a characteristic of communities, not of individuals living within communities. The present study also confirms what was pointed out by Hill (1996) that sense of community is a community-level phenomenon that operates setting-specific. Furthermore, the present study corroborates what was put forward by Townley et al. (2011), that sense of community is a component of community life.

Tierney and Oliver-Smith (2012) put forward that the recovery process must support the community's efforts to make itself whole again by re-knitting the cultural fabric in a coherent fashion. The present theme suggests that '*gotong royong*' is an

essential feature of the community fabric and the community's cultural fabric. The failure of post-disaster recovery efforts to put emphasis on the key importance of '*gotong royong*' suggests that connections to community's cultural fabric are deeper and more fundamental than is recognised in the existing 'theory' underpinning relocation.

6.6 Themes interconnected: A grounded theory of “the enduring role of culture in community recovery post-disaster”

The presented themes suggest community recovery post-disaster encompasses a range of elements that include pre-disaster systems of meaning and practice, impacts of disaster to place, post-disaster aid, and working social support. These are elements that would bring equilibrium after a community is exposed to perturbation. These elements are interconnected. The interconnection is interwoven by the symbolism and the action notion of culture. Culture is an overarching element that guides the process of change from pre-disaster normalcy, through disaster, to post-disaster recovery.

Using the lens of Hobfoll's (2011) Conservation of Resources theory, culture is resourceful and, in itself, culture is a resource. According to Hobfoll (1989), resources are those things that possess instrumental value to individuals and also possess symbolic value by which they facilitate individuals to define who they are. The utterance “Merapi people's soul is Merapi” powerfully conveys how Merapi defines the people of Merapi. The symbolic meaning of Merapi and patterned practices around such a symbolic meaning define who they are. Another utterance “People who live in Merapi, their life comes from the soil of Merapi... it is our flesh and blood” ultimately expresses how instrumental and meaningful are Merapi and the culture of

people that are defined by it. For that reason, for community recovery post-disaster to work, undoubtedly it needs to be cultural.

The interconnected elements put forward by the present study elaborate previous studies, which rarely touch upon the significant nexus between culture and disaster recovery (see Chamlee-Wright, 2010; Hoffman, 1999b; Nakagawa & Suwa, 2010; Tierney & Oliver-Smith, 2012). An early account of a cultural approach to disaster recovery can be found in Hoffman's (1999b) anthropological study that posited disaster recovery as an experience goes through different phases of crisis (primary), aftermath nexus (secondary), and passage to closure (third). In this stage-oriented model, recovery is a process in which people's set of meanings and explanations are reshaped as they go through the process. In this conceptualisation, disaster recovery is merely seen as a linear process through a period of time. Chamlee-Wright (2010) pointed out that whether a community will rebound or fail to rebound is dependent upon the strategies that include institutional rules to manage resources in the complex social coordination and cooperation that prevails in the wake of disaster. Disaster recovery, therefore, is a social learning process from which strategies are developed to tap into resources available or being delivered in the wake of disaster. In this way, disaster recovery consists of different element of strategies that include cultural economy and political economy strategies. Meanwhile, Nakagawa and Suwa (2010) suggested a cultural approach in a narrower sense: that disaster recovery needs to include cultural arts elements.

A broader suggestion came from Tierney and Oliver-Smith's (2012) social dimension of disaster recovery that is much like the theoretical proposal of the present study. According to Tierney and Oliver-Smith (2012) disasters occur, on the one hand, as material, physical events. On the other hand, the occurrence of disasters

engages “a multiplicity of interwoven and often conflicting social and cultural constructions” (Tierney & Oliver-Smith, 2012, p. 124). As a consequence, social recovery is inseparably associated with a multitude of elements such as infrastructures, ecosystems, organisations and institutions, economic activity, and culture. Hence, social recovery is substantially a holistic process that encompasses pre-disaster factors that shape vulnerabilities and exposures at multiple scales, disasters’ impacts and their implications for recovery, immediate post-impact responses, and post-disaster variables.

The present study shares similarities as well as differences with the aforementioned studies. With regard to Tierney and Oliver-Smith’s (2012) pre-disaster factors, the present study differs in the way that pre-disaster systems of meaning and practice are not viewed as vulnerability factors. The developed systems of meaning and practice presented in the present study are enduring and over generations provide a system of knowledge for harmonious living with the volcano, both through its non-eruptive and eruptive periods. Following on from what has come to light in the present study, it is not its intention to problematise, nor exoticise the pre-disaster systems of meaning and practice because, as Watts (1983) posited, hazard needs to be situated in a contextual understanding and our theory of hazard “has been framed by concepts and assumptions which carry a historically specific view of nature, society and man and hence, by extension, of the relations between them” (p. 231). Last but not least, the present study points out a setting specific cultural mechanism, ‘*gotong royong*’ that locates social capital and sense of community in their most vivid forms to be indicative of community recovery post-disaster. Taking everything into account, the present study suggests that there is an enduring role of culture in community recovery post-disaster.

6.7 Implications for practice

The present study highlights that a change is inevitable for the community living on the slopes of one of the most active volcanoes, not only in Indonesia, but also in the world. Yet, changes in the wake of eruptions have never been viewed as being as disruptive as when the community experienced permanent relocation, which brought dramatic disruption to human-environment relations. The eruptive period of the volcano is not seen as a one-off event. In fact, the eruptive period of the volcano is part of a full cycle of the volcano's life that goes along an enduring community's life. The community's life endures and evolves throughout the human-environment relations that are adaptive and productive. The volcano is not seen simply as a physical reality, so its eruption is not merely a physical or material event. The community has developed a system of meaning and a system practice – agro-ecological practice – that not only naturalised the hazard (Dove, 2008), but also brought a meaningful and resourceful life. All of this was behind the functioning of the community before the community experienced permanent relocation.

Based on the theoretical propositions that the present study puts forward and acknowledgement of a vast array of factors (e.g., financial, governance, political climate), there are recommendations to be considered for practices of disaster recovery in the future. First and foremost, appreciate culture as being as important as housing, infrastructures, livelihoods, and services that need to be restored post-disaster. Appreciating culture means to understand what constitutes the functioning of the community pre-disaster. It is in the functioning of community that culture characterises the life of community. In this regard, culture needs to be understood broadly as what gives life to community. As previously mentioned, to understand culture includes comprehending the systems of meaning and practice that operate in

the community. Sense of urgency to respond and to provide material aid, which in many ways is genuinely needed, should not repudiate or hamper the process of understanding culture of community. In fact, there is a space where such a process of understanding can go hand in hand with urgent responses and provision of material aid. In other words, whoever comes from outside of the community needs to look beyond what disasters do physically to the community and to engage in the collection of information that not merely functions as a needs assessment in conventional ways (e.g., ticking boxes, quantifying). The collection of information can be in qualitative ways through deep conversation and immersion in the community in any possible way.

Second, integrate understanding of local culture in disaster recovery. Disasters deplete resources and create highly demanding ecology that makes resource investment difficult to take place (Hobfoll, 2012). Disasters create resource losses that include object resources (e.g., houses, properties), condition resources (e.g., employment), personal resources (e.g., self-esteem), and energy resources (e.g., money). Culture per se is not considered as a resource in Hobfoll's (2011) theorisation of resources. Nevertheless, the present study provides an argument that culture is resourceful and can be an important resource for community recovery, rather than merely static social markers for understanding group differences. Culture is a resource because not only is it valued, but it is also a means for social action (Cruz & Sonn, 2011) used to conduct the regulation of self and the operation of social relations (Hobfoll, 2012). As in the example of '*gotong royong*', through the practice of '*gotong royong*' people can achieve personal peace ('*tentrem*') that can also be considered as attained self-regulation. Through the practice of '*gotong royong*' community can also achieve harmonious social relations.

So, it is quite clear that when a deeper understanding of community culture is integrated in disaster recovery it could bring integrity to people's lives and community's life. For example, in the present study the integrity of people's lives and the community's life could not be achieved since the relocation significantly reduced people's lived space, seriously obstructed patterned practice within the space, and weakened '*gotong royong*'. If recovery efforts are targeted to not reduce people's lived space, to not obstruct patterned practice within the space, and to facilitate '*gotong royong*', then community recovery would largely be attained or would pose less challenges. In this way, people would not lose the meaning of place so they could slowly give meaning to new place. To integrate understanding of local culture in disaster recovery is eventually to re-establish the meaning of place, or sense of place.

Third, recognise sense of community and social capital. Sense of community and social capital are alike or closely related with sense of community being the strongest predictor of social capital (Perkins et al., 2002; Perkins & Long, 2002). Both sense of community and social capital have been found to be influential to post-disaster recovery by the present study and previous studies (e.g., Aldrich, 2015; Chamlee-Wright & Storr, 2011; Kusumasari & Alam, 2012; Nakagawa & Shaw, 2004). With regard to social capital, it needs to be viewed both as network and social relationships that foster social actions (Coleman, 1988). So, it is important for recovery efforts to identify and rebuild networks and to identify and reinvigorate mechanisms of social relationships that foster social action. An insight presented by the present study is that '*gotong royong*' as a practice equally represents working social relationships and social action arises from social relationships. Reinvigorating it, as social capital or sense of community, proves to be beneficial for community recovery.

6.8 Limitations of the study

Despite the present study providing valuable understanding of a community's experience with change as a result of disaster, there are some limitations to take into consideration. First, there was no first-hand data obtained with regard to the life of community before the eruption and the relocation. The fieldwork of the present study could not directly obtain data as the community had already relocated permanently. The nature of the fieldwork was to get immersed in the life of the community in the relocation. The immersion was considered successful through staying in the relocation for about three months, allowing for a good rapport building, genuine interaction with the community, and sufficient data collection through interviews, focus groups, and observation. Nothing could be done to obtain first-hand data before the eruption and relocation. To handle this shortcoming, it was complemented through visiting another village on the slopes of Merapi in the same district that was not affected by the eruption and where life was as regular as before the eruption. So, the account of the community's life before the relocation came from the combination of visiting another village, oral information, and secondary resources (e.g., publications about Merapi and community living on the slopes of Merapi). Nevertheless, this potentially results in different information compared with information obtained directly or first-hand before the eruption.

Second, the present study mainly obtained the accounts from one relocation site, which was the biggest site. Despite efforts to obtain data from another relocation site, the intensity of rapport building, interaction, and observation were different from the main site. This inherently led to a different depth of information obtained.

Third, the accounts obtained through interviews and focus groups mainly came from adults. Less elders and youth participated in interviews and focus groups in

comparison to adults. The accounts mostly came from those who were more approachable. Taken together, this could result in less diversity of accounts or views provided.

6.9 Conclusion

The present study aims to extend the understanding of the consequences of relocation for sense of community and connection to place on relocated communities. From the themes derived and further analysis of the themes, the present study found that relocation primarily did little to acknowledge and reconstruct the meaning of place that was rooted culturally. Before relocation, people developed and maintained meaning of place through a system of belief about Merapi and enduring patterned agro-ecological practices that were adaptive and productive in the eruptive and non-eruptive periods of Merapi. Meaning of place before relocation also stemmed from social bonding that people developed through social relations that followed their system of belief about Merapi and enduring patterned agro-ecological practices.

The limited ability of relocation to reconstruct the meaning of place gave rise to the loss of meaning of the new place. The loss of meaning of the new place contributed to the disconnection from place in the form of disruption to place attachment and place identity. As a consequence of both the loss of meaning of the new place and disconnection to place, relocation adversely affected sense of community since sense of community is inextricably linked with place attachment.

Both sense of community and place attachment were connected to place. As the meaning of place was culturally rooted, the understanding of cultural contexts of sense of community and connection to place became of importance for post-disaster recovery efforts. As Nakagawa and Suwa (2010) described it, "...material aid – such

as the supply of temporary housing – is well discussed within disaster recovery research..., but nonmaterial aid... is rarely discussed” (p. 28). Nakagawa and Suwa went on: “There is a plethora of research on mental support for individual disaster victims..., but culture within the community is not the sphere of psychologists”. Meanwhile, Tierney and Oliver-Smith (2012) noted that culture as a dimension of social recovery has only recently attracted serious investigation. As such Tierney and Oliver-Smith described it: “This is puzzling...” (Tierney & Oliver-Smith, 2012, p. 136). In connection with concerns put forward by Nakagawa and Suwa (2010) and Tierney and Oliver-Smith (2012), the present study found that cultural contexts of sense of community and connection to place were situated in a system of belief about Merapi and patterned agro-ecological practices. Both system of belief about Merapi and patterned agro-ecological practices constituted contextual physical rootedness and social bonding in social relations. In other words, cultural contexts of sense of community and connection to place were closely related to contextual physical rootedness and social bonding in social relations. Hence, to enhance post-disaster recovery efforts is to consider the importance of sense of community and connection to place, and these factors must be considered within the local cultural context in order for a more meaningful community recovery to take place.

References

- Abbott, S., & Freeth, D. (2008). Social capital and health starting to make sense of the role of generalized trust and reciprocity. *Journal of Health Psychology, 13*(7), 874-883.
- Abramson, D. M., Stehling-Ariza, T., Park, Y. S., Walsh, L., & Culp, D. (2010). Measuring individual disaster recovery: A socioecological framework. *Disaster Medicine and Public Health Preparedness, 4*(SUPPL. 1), S46-S54.
- Affan, M., Koshimura, S., Imamura, F., Sofyan, H., Agustina, S., & Fadli, N. (2015). Lessons Learned from two villages in the tsunami most affected area of Banda Aceh City: A review of the housing reconstruction and the current state of village development. In V. Santiago-Fandiño, Y. A. Kontar, & Y. Kaneda (Eds.), *Post-tsunami hazard: Reconstruction and restoration* (pp. 59-72). Cham: Springer.
- Aghabakhshi, H., & Gregor, C. (2007). Learning the lessons of Bam: The role of social capital. *International Social Work, 50*(3), 347-356.
- Alaimo, K., Reischl, T. M., & Allen, J. O. (2010). Community gardening, neighborhood meetings, and social capital. *Journal of Community Psychology, 38*(4), 497-514.
- Albala-Bertrand, J. M. (1993). *The political economy of large natural disasters: With special reference to developing countries*. New York: Oxford University Press.
- Albrecht, G. (2005). 'Solastalgia': A new concept in health and identity. *PAN: Philosophy Activism Nature, 3*, 41-55.
- Albrecht, G., Sartore, G.-M., Connor, L., Higginbotham, N., Freeman, S., Kelly, B., . . . Pollard, G. (2007). Solastalgia: The distress caused by environmental change. *Australasian Psychiatry, 15*(sup1), S95-S98.
- Aldrich, D. P. (2010). Fixing recovery: Social capital in post-crisis resilience. *Journal of Homeland Security, 6*, 1-10.
- Aldrich, D. P. (2015). Social capital in post disaster recovery: Strong networks and communities create a resilient East Asian community. In D. P. Aldrich, S. Oum, & Y. Sawada (Eds.), *Resilience and recovery in Asian disasters: Community ties, market mechanism, and governance* (pp. 19-34). Tokyo: Springer.
- Aldrich, D. P., & Meyer, M. A. (2015). Social capital and community resilience. *American Behavioral Scientist, 59*(2), 254-269.

- Alesch, D. J. (2005). *Complex urban systems and extreme events: Toward a theory of disaster recovery*. Paper presented at the 1st International Conference of Urban Disaster Reduction, Kobe, Japan.
- Alexander, D. (1997). The study of natural disasters, 1977-1997: Some reflections on a changing field of knowledge. *Disasters*, 21(4), 284-304.
- Alexander, D. (2005). An interpretation of disaster in terms of changes in culture, society and international relations. In R. W. Perry & E. L. Quarantelli (Eds.), *What is a disaster? New answers to old questions* (pp. 25-38). Bloomington, IN: Xlibris.
- Altman, I., & Low, S. M. (Eds.). (1992). *Place attachment*. New York: Plenum Press.
- Anderson, B. (1983). *Imagined communities: Reflections on the origin and spread of nationalism*. London: Verso.
- Anton, C. E., & Lawrence, C. (2014). Home is where the heart is: The effect of place of residence on place attachment and community participation. *Journal of Environmental Psychology*, 40, 451-461.
- Anton, C. E., & Lawrence, C. (2016). Does place attachment predict wildfire mitigation and preparedness? A comparison of wildland–urban interface and rural communities. *Environmental Management*, 57(1), 148-162.
- Auerbach, C., & Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis*. New York: New York University Press.
- Bachrach, K. M., & Zautra, A. J. (1985). Coping with a community stressor: The threat of a hazardous waste facility. *Journal of Health and Social Behavior*, 127-141.
- Baird, I. G., & Shoemaker, B. (2007). Unsettling experiences: Internal resettlement and international aid agencies in Laos. *Development and Change*, 38(5), 865-888.
- Baisden, B., & Quarantelli, E. L. (1981). The delivery of mental health services in community disasters: An outline of research findings. *Journal of Community Psychology*, 9(3), 195-203.
- Banyard, V. L., & Miller, K. E. (1998). The powerful potential of qualitative research for community psychology. *American Journal of Community Psychology*, 26(4), 485-505.

- Bappenas-BNPB. (2011). *Rencana aksi rehabilitasi dan rekonstruksi pascabencana erupsi Merapi di wilayah provinsi DI Yogyakarta dan provinsi Jawa Tengah tahun 2011-2013*.
- Barton, A. H. (1969). *Communities in disasters*. Garden City, New York: Doubleday.
- Beggs, J. J., Haines, V., & Hurlbert, J. S. (1996). The effects of personal network and local community contexts on the receipt of formal aid during disaster recovery. *International Journal of Mass Emergencies and Disasters*, 14(1), 57-78.
- Berdoulay, V. (1989). Place, meaning, and discourse in French language geography. In J. A. Agnew & J. S. Duncan (Eds.), *The power of place: Bringing together geographical and sociological imaginations* (pp. 124-139). London: Unwin Hyman.
- Berke, P. R., Chuenpagdee, R., Juntarashote, K., & Chang, S. (2008). Human-ecological dimensions of disaster resiliency in Thailand: Social capital and aid delivery. *Journal of Environmental Planning and Management*, 51(2), 303-317.
- Berke, P. R., Kartez, J., & Wenger, D. (1993). Recovery after disaster: Achieving sustainable development, mitigation and equity. *Disasters*, 17(2), 93-109.
- Bernardo, F., & Palma-Oliveira, J.-M. (2016). Urban neighbourhoods and intergroup relations: The importance of place identity. *Journal of Environmental Psychology*, 45, 239-251.
- Berry, J. W., Poortinga, Y. H., Breugelmans, S. M., Chasiotis, A., & Sam, D. L. (2011). *Cross-cultural psychology: Research and applications*. New York: Cambridge University Press.
- Bess, K. D., Fisher, A. T., Sonn, C. C., & Bishop, B. J. (2002). Psychological sense of community: Theory, research, and application. In A. T. Fisher, C. C. Sonn, & B. J. Bishop (Eds.), *Psychological sense of community: Research, applications, and implications*. (pp. 3-22). New York: Kluwer Academic/Plenum Publishers.
- Betancourt, H., & Lopez, S. R. (1993). The study of culture, ethnicity, and race in American psychology. *American Psychologist*, 48(6), 629-637.
- Binder, S. B., & Baker, C. K. (2016). Culture, local capacity, and outside aid: A community perspective on disaster response after the 2009 tsunami in American Sāmoa. *Disasters*, 41(2), 282-305.

- Binder, S. B., Baker, C. K., & Barile, J. P. (2015). Rebuild or relocate? Resilience and postdisaster decision-making after Hurricane Sandy. *American Journal of Community Psychology, 56*(1-2), 180-196.
- Binder, S. B., Baker, C. K., Mayer, J., & O'Donnell, C. R. (2014). Resilience and recovery in American Sāmoa: A case study of the 2009 South Pacific tsunami. *Journal of Community Psychology, 42*(7), 799-822.
- Bishop, B., & Vicary, D. (2003). Paradoxes, parables and conundrums: A new sense of community. *Network, The Journal of the College of Community Psychologists, 14*(1), 33-37.
- Bland, S. H., O'leary, E. S., Farinaro, E., Jossa, F., Krogh, V., Violanti, J. M., & Trevisan, M. (1997). Social network disturbances and psychological distress following earthquake evacuation. *The Journal of Nervous and Mental Disease, 185*(3), 188-195.
- Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Berkeley and Los Angeles, California: University of California Press.
- Boen, T., & Jigyasu, R. (2005). *Cultural considerations for post disaster reconstruction post-tsunami challenges*. Asian Disaster Preparedness Center, Bangkok.
- Boğaç, C. (2009). Place attachment in a foreign settlement. *Journal of Environmental Psychology, 29*(2), 267-278.
- Bohannon, P., Blacking, J., Bock, B., Colby, B. N., DeRaedt, J., Epstein, D. G., . . . Hay, T. H. (1973). Rethinking culture: A project for current anthropologists [and comments and reply]. *Current Anthropology, 14*(4), 357-372.
- Bolin, R. (1976). Family recovery from natural disaster: A preliminary model. *Mass Emergencies, 1*(4), 267-277.
- Bolin, R., & Bolton, P. A. (1986). *Race, religion, and ethnicity in disaster recovery*. Paper 88. FMHI Publications, University of South Florida.
- Bolin, R., & Stanford, L. (1991). Shelter, housing and recovery: A comparison of US disasters. *Disasters, 15*(1), 24-34.
- Bonaiuto, M., Breakwell, G. M., & Cano, I. (1996). Identity processes and environmental threat: The effects of nationalism and local identity upon perception of beach pollution. *Journal of Community & Applied Social Psychology, 6*(3), 157-175.

- Bonnano, G. A., Brewin, C. R., Kaniasty, K., & Greca, A. M. L. (2010). Weighing the cost of disaster: Consequences, risk, and resilience in individuals, families, and communities. *Psychological Science in the Public Interest*, *11*(1), 1-49.
- Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). New York: Greenwood Press.
- Bowen, J. R. (1986). On the political construction of tradition: Gotong Royong in Indonesia. *The Journal of Asian Studies*, *45*(03), 545-561.
- Bradshaw, T. K. (2008). The post-place community: Contributions to the debate about the definition of community. *Community Development*, *39*(1), 5-16.
- Breakwell, G. M. (1992). Processes of self-evaluation: Efficacy and estrangement. In G. M. Breakwell (Ed.), *Social psychology of identity and self-concept* (pp. 35-55). Surrey: Surrey University Press.
- Brehm, J. M., Eisenhauer, B. W., & Krannich, R. S. (2004). Dimensions of community attachment and their relationship to well-being in the amenity-rich rural west. *Rural Sociology*, *69*(3), 405-429.
- Brint, S. (2001). Gemeinschaft revisited: A critique and reconstruction of the community concept. *Sociological Theory*, *19*(1), 1-23.
- Britton, N. R. (1986). Developing an understanding of disaster. *Australian and New Zealand Journal of Sociology*, *22*(2), 254-272.
- Britton, N. R. (2005). What's a word? Opening up the debate. In R. W. Perry & E. L. Quarantelli (Eds.), *What is a disaster? New answers to old questions* (pp. 60-78). Bloomington, IN: Xlibris.
- Brodsky, A. E. (2009). Multiple psychological sense of community in Afghan context: Exploring commitment and sacrifice in an underground resistance community. *American Journal of Community Psychology*, *44*(3-4), 176-187.
- Brodsky, A. E., & Marx, C. M. (2001). Layers of identity: Multiple psychological senses of community within a community setting. *Journal of Community Psychology*, *29*(2), 161-178.
- Brown, B., Perkins, D. D., & Brown, G. (2003). Place attachment in a revitalizing neighborhood: Individual and block levels of analysis. *Journal of Environmental Psychology*, *23*(3), 259-271.

- Brown, B. B., & Perkins, D. D. (1992). Disruptions in place attachment. In I. Altman & S. M. Low (Eds.), *Place Attachment* (pp. 279-304). New York: Plenum Press.
- Brown, B. B., & Werner, C. M. (1985). Social cohesiveness, territoriality, and holiday decorations the influence of cul-de-sacs. *Environment and Behavior*, *17*(5), 539-565.
- Bryant, A., & Charmaz, K. (2007). *The SAGE handbook of grounded theory*. London: SAGE.
- Buckner, J. C. (1988). The development of an instrument to measure neighborhood cohesion. *American Journal of Community Psychology*, *16*(6), 771-791.
- Buttimer, A. (1980). Home, reach, and the sense of place. In A. Buttimer & D. Seamon (Eds.), *The human experience of space and place* (pp. 166-187). London: Croom Helm.
- Calvin, J. (2012). Community recovery, a new value proposition for community investment. *Community Development*, *43*(5), 645-655.
- Campbell, C., & Jovchelovitch, S. (2000). Health, community and development: Towards a social psychology of participation. *Journal of Community & Applied Social Psychology*, *10*(4), 255-270.
- Canter, D. (1986). Putting situations in their place: Foundations for a bridge between social and environmental psychology. In A. Furnham (Ed.), *Social behaviour in context* (pp. 208-239). London: Allyn and Bacon.
- Carlisle-Frank, P. L. (1992). The relocation experience: Analysis of factors thought to influence adjustment to transition. *Psychological Reports*, *70*(3), 835-838.
- Carr, L. J. (1932). Disaster and the sequence-pattern concept of social change. *American Journal of Sociology*, *38*(2), 207-218.
- Chamlee-Wright, E. (2010). *The cultural and political economy of recovery: Social learning in a post-disaster environment*. New York: Routledge.
- Chamlee-Wright, E., & Storr, V. H. (2009). "There's no place like New Orleans": Sense of place and community recovery in the Ninth Ward after Hurricane Katrina. *Journal of Urban Affairs*, *31*(5), 615-634.
- Chamlee-Wright, E., & Storr, V. H. (2011). Social capital as collective narratives and post-disaster community recovery. *The Sociological Review*, *59*(2), 266-282.

- Chandrasekhar, D. (2012). Digging deeper: Participation and non-participation in post-disaster community recovery. *Community Development, 43*(5), 614-629.
- Chang, S. E. (2010). Urban disaster recovery: A measurement framework and its application to the 1995 Kobe earthquake. *Disasters, 34*(2), 303-327.
- Charmaz, K. (1990). 'Discovering' chronic illness: Using grounded theory. *Social Science & Medicine, 30*(11), 1161-1172.
- Charmaz, K. (2000). Grounded theory: Constructivist and objectivist grounded theory. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 509-535). Thousand Oaks, California: Sage Publications.
- Charmaz, K. (2004). Premises, principles, and practices in qualitative research: Revisiting the foundations. *Qualitative Health Research, 14*(7), 976-993.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage.
- Charmaz, K. (2008). Constructionism and the grounded theory method. In J. A. Holstein & J. F. Gubrium (Eds.), *Handbook of constructionist research* (pp. 397-412). New York: The Guilford Press.
- Charmaz, K. (2013). Grounded theory in the 21st century: Applications for advancing social justice. In N. K. Denzin & Y. S. Lincoln (Eds.), *Strategies of qualitative inquiry* (3rd ed., pp. 203-241). Thousand Oaks, California: Sage.
- Chipuer, H. M., & Pretty, G. M. (1999). A review of the sense of community index: Current uses, factor structure, reliability, and further development. *Journal of Community Psychology, 27*(6), 643-658.
- Chiu, C., & Hong, Y. (2006). *Social psychology of culture*. New York: Taylor & Francis.
- Chow, K., & Healey, M. (2008). Place attachment and place identity: First-year undergraduates making the transition from home to university. *Journal of Environmental Psychology, 28*(4), 362-372.
- Cline, R. J., Orom, H., Berry-Bobovski, L., Hernandez, T., Black, C. B., Schwartz, A. G., & Ruckdeschel, J. C. (2010). Community-level social support responses in a slow-motion technological disaster: The case of Libby, Montana. *American Journal of Community Psychology, 46*(1-2), 1-18.
- Cohen, A. (2010). Just how many different forms of culture are there? *American Psychologist, 65*(1), 59-61.

- Cohen, A. B. (2009). Many forms of culture. *American Psychologist*, 64(3), 194-204.
- Cohen, A. P. (1985). *The symbolic construction of community*. London: Routledge.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95-S120.
- Comerio, M. C. (2014). Disaster recovery and community renewal: Housing approaches. *Cityscape: A Journal of Policy Development and Research*, 16(2), 51-68.
- Cook, K. S. (2005). Networks, norms, and trust: The social psychology of social capital. *Social Psychology Quarterly*, 68(1), 4-14.
- Cooper, C. R., & Denner, J. (1998). Theories linking culture and psychology: Universal and community-specific processes. *Annual Review of Psychology*, 49(1), 559-584.
- Cox, H. M., & Holmes, C. A. (2000). Loss, healing, and the power of place. *Human Studies*, 23(1), 63-78.
- Cox, R. S., & Perry, K. M. E. (2011). Like a fish out of water: Reconsidering disaster recovery and the role of place and social capital in community disaster resilience. *American Journal of Community Psychology*, 48(3-4), 395-411.
- Cresswell, T. (1997). Weeds, plagues, and bodily secretions: A geographical interpretation of metaphors of displacement. *Annals of the Association of American Geographers*, 87(2), 330-345.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, California: Sage Publications.
- Cronstedt, M. (2002). Prevention, preparedness, response, recovery - An outdated concept? *The Australian Journal of Emergency Management*, 17(2), 10-13.
- Cruz, M. R., & Sonn, C. C. (2011). (De)colonizing culture in community psychology: Reflections from critical social science. *American Journal of Community Psychology*, 47(1-2), 203-214.
- Dallago, L., Perkins, D. D., Santinello, M., Boyce, W., Molcho, M., & Morgan, A. (2009). Adolescent place attachment, social capital, and perceived safety: A comparison of 13 countries. *American Journal of Community Psychology*, 44(1-2), 148-160.
- Danziger, K. (1960). Parental demands and social class in Java, Indonesia. *The Journal of Social Psychology*, 51(1), 75-86.

- Davidson, W. B., & Cotter, P. R. (1986). Measurement of sense of community within the sphere of city. *Journal of Applied Social Psychology, 16*(7), 608-619.
- Davidson, W. B., & Cotter, P. R. (1991). The relationship between sense of community and subjective well-being: A first look. *Journal of Community Psychology, 19*(3), 246-253.
- De Dominicis, S., Fornara, F., Cancellieri, U. G., Twigger-Ross, C., & Bonaiuto, M. (2015). We are at risk, and so what? Place attachment, environmental risk perceptions and preventive coping behaviours. *Journal of Environmental Psychology, 43*, 66-78.
- Deeny, P., & McFetridge, B. (2005). The impact of disaster on culture, self, and identity: Increased awareness by health care professionals is needed. *Nursing Clinics of North America, 40*(3), 431-440.
- Delanty, G. (2010). *Community* (2nd ed.). London: Routledge.
- Denzin, N. K., & Lincoln, Y. S. (2000). The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 1-28). Thousand Oaks, California: Sage Publications.
- Devine-Wright, P., & Clayton, S. (2010). Introduction to the special issue: Place, identity and environmental behaviour. *Journal of Environmental Psychology, 30*(3), 267-270.
- Devine-Wright, P., & Howes, Y. (2010). Disruption to place attachment and the protection of restorative environments: A wind energy case study. *Journal of Environmental Psychology, 30*(3), 271-280.
- Devine-Wright, P. (2009). Rethinking NIMBYism: The role of place attachment and place identity in explaining place-protective action. *Journal of Community & Applied Social Psychology, 19*(6), 426-441.
- Dixon, J., & Durrheim, K. (2000). Displacing place-identity: A discursive approach to locating self and other. *British Journal of Social Psychology, 39*(1), 27-44.
- Dixon, J., & Durrheim, K. (2004). Dislocating identity: Desegregation and the transformation of place. *Journal of Environmental Psychology, 24*(4), 455-473.
- Djalante, R., Thomalla, F., Sinapoy, M. S., & Carnegie, M. (2012). Building resilience to natural hazards in Indonesia: Progress and challenges in implementing the Hyogo Framework for Action. *Natural Hazards, 62*(3), 779-803.

- Dombrowsky, W. R. (1998). Again and again: Is a disaster what we call a "disaster"? In E. L. Quarantelli (Ed.), *What is a disaster? Perspectives on the questions* (pp. 13-24). New York: Routledge.
- Donovan, K. (2010). Doing social volcanology: Exploring volcanic culture in Indonesia. *Area*, 42(1), 117-126.
- Dove, M. (2007). Perception of local knowledge and adaptation on Mount Merapi, Central Java. In R. Ellen (Ed.), *Modern crises and traditional strategies: Local ecological knowledge in Island Southeast Asia* (pp. 238-262). New York: Berghahn Books.
- Dove, M. R. (2006). Volcanic eruption as metaphor of social integration: A political ecological study of Mount Merapi, Central Java. In J. Connell & E. Waddell (Eds.), *Environment, development and change in rural Asia-Pacific: Between local and global* (pp. 16-37). New York: Routledge.
- Dove, M. R. (2008). Perception of volcanic eruption as agent of change on Merapi volcano, Central Java. *Journal of Volcanology and Geothermal Research*, 172(3), 329-337.
- Dove, M. R. (2010). The panoptic gaze in a non-western setting: Self-surveillance on Merapi volcano, Central Java. *Religion*, 40(2), 121-127.
- Druzhinina, I., & Palma-Oliveira, J. (2004). Radioactive contamination of wild mushrooms: a cross-cultural risk perception study. *Journal of Environmental Radioactivity*, 74(1), 83-90.
- Dwyer, C., & Horney, J. (2014). Validating indicators of disaster recovery with qualitative research. *PLOS Currents Disasters*, 6.
- Dynes, R. (1998). Coming to terms with community disaster. In E. L. Quarantelli (Ed.), *What is a disaster? Perspectives on the questions* (pp. 109-126). New York: Routledge.
- Dynes, R. (2006). Social capital: Dealing with community emergencies. *Homeland Security Affairs*, 2(2), 1-16.
- Dynes, R. R. (2002). *The importance of social capital in disaster response*. Disaster Research Center, University of Delaware.
- Dynes, R. R. (2005). *Community social capital as the primary basis for resilience*. Disaster Research Center, University of Delaware.
- Eagleton, T. (2000). *The idea of culture*. Malden, MA: Blackwell.

- EMA. (2004). *Emergency management concepts and principles*. Dickson ACT: Emergency Management Australia.
- Evangelidis, I., & Van den Bergh, B. (2013). The number of fatalities drives disaster aid increasing sensitivity to people in need. *Psychological Science, 24*(11), 2226-2234.
- Fairbrother, P., Tyler, M., Hart, A., Mees, B., Phillips, R., Stratford, J., & Toh, K. (2013). Creating “community”? Preparing for bushfire in rural Victoria. *Rural Sociology, 78*(2), 186-209.
- Farr, J. (2004). Social capital: A conceptual history. *Political Theory, 32*(1), 6-33.
- Fassio, O., Rollero, C., & De Piccoli, N. (2013). Health, quality of life and population density: A preliminary study on “contextualized” quality of life. *Social Indicators Research, 110*(2), 479-488.
- Fergusson, D. M., & Boden, J. M. (2014). The psychological impacts of major disasters. *Australian & New Zealand Journal of Psychiatry, 48*(7), 597-599.
- Fisher, A. T., Sonn, C. C., & Evans, S. D. (2007). The place and function of power in community psychology: Philosophical and practical issues. *Journal of Community & Applied Social Psychology, 17*(4), 258-267.
- Flaherty, J., Zwick, R. R., & Bouchey, H. A. (2014). Revisiting the Sense of Community Index: A confirmatory factor analysis and invariance test. *Journal of Community Psychology, 42*(8), 947.
- Foucault, M. (1980). *Power/knowledge: Selected interviews and other writings, 1972-1977*. New York: Pantheon Books.
- French, S., Wood, L., Foster, S. A., Giles-Corti, B., Frank, L., & Learnihan, V. (2014). Sense of community and its association with the neighborhood built environment. *Environment and Behavior, 46*(6), 677-697.
- Fried, M. (2000). Continuities and discontinuities of place. *Journal of Environmental Psychology, 20*(3), 193-205.
- Fritz, C. E. (1961). Disasters. In R. K. Merton & R. A. Nisbet (Eds.), *Contemporary social problems: An introduction to the sociology of deviant behavior and social disorganization*. Riverside, CA: University of California Press.
- Fukuyama, F. (2001). Social capital, civil society and development. *Third World Quarterly, 22*(1), 7-20.

- Fullilove, M. T. (1996). Psychiatric implications of displacement: Contributions from the psychology of place. *The American Journal of Psychiatry*, 153(12), 1516-1523.
- Fullilove, M. T., & Fullilove, R. E. (2000). What's housing got to do with it? *American Journal of Public Health*, 90(2), 183-184.
- Ganapati, N. E. (2012). In good company: Why social capital matters for women during disaster recovery. *Public Administration Review*, 72(3), 419-427.
- García, I., Giuliani, F., & Wiesenfeld, E. (1999). Community and sense of community: The case of an urban barrio in Caracas. *Journal of Community Psychology*, 27(6), 727-740.
- Garnett, J. D., & Moore, M. (2010). Enhancing disaster recovery: Lessons from exemplary international disaster management practices. *Journal of Homeland Security and Emergency Management*, 7(1), 1-20.
- Gattino, S., Piccoli, N., Fassio, O., & Rollero, C. (2013). Quality of life and sense of community. A study on health and place of residence. *Journal of Community Psychology*, 41(7), 811-826.
- Geertz, C. (1957). Ritual and social change: A Javanese example. *American Anthropologist*, 59(1), 32-54.
- Geertz, C. (1964). Ideology as a cultural system. In D. E. Apter (Ed.), *Ideology and discontent* (pp. 47-76). New York: Free Press.
- Geertz, C. (1973). *The interpretation of cultures: Selected essays*. New York: Basic Books.
- Geertz, C. (2000). *Available light: Anthropological reflections on philosophical topics*. Princeton, NJ: Princeton University Press.
- Gemignani, M., & Peña, E. (2007). Postmodern conceptualizations of culture in social constructionism and cultural studies. *Journal of Theoretical and Philosophical Psychology*, 27(2-1), 276.
- Gergen, K. J., Josselson, R., & Freeman, M. (2015). The promises of qualitative inquiry. *American Psychologist*, 70(1), 1-9.
- Gertisser, R., Charbonnier, S. J., Troll, V. R., Keller, J., Preece, K., Chadwick, J., . . . Herd, R. (2011). Merapi (Java, Indonesia): Anatomy of a killer volcano. *Geology Today*, 27(2), 57-62.

- Gilchrist, A. (2009). *The well-connected community: A networking approach to community development*. Bristol: The Policy Press.
- Giuliani, M. V. (2003). Theory of attachment and place attachment. In M. Bonnes, T. Lee, & M. Bonaiuto (Eds.), *Psychological theories for environmental issues* (pp. 137-170). Aldershot: Ashgate.
- Glaser, B. G. (1992). *Basics of grounded theory analysis: Emergence vs forcing*. Mill Valley, CA: The Sociology Press.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine de Gruyter.
- Goodenough, W. H. (1961). Comment on cultural evolution. *Daedalus*, 90(3), 521-528.
- Goodenough, W. H. (1981). *Culture, language, and society*. Menlo Park, CA: Benjamin-Cummings Publishing Company.
- Gould, C. W. (2009). The right to housing recovery after natural disasters. *Harvard Human Rights Journal*, 22(2), 169-204.
- Green, B. L. (1991). Evaluating the effects of disasters. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3(4), 538-546.
- Gridley, H., & Breen, L. J. (2007). So far and yet so near? Community psychology in Australia. In S. M. Reich, M. Reimer, I. Prilleltensky, & M. Montero (Eds.), *International community psychology: History and theories* (pp. 119-139). New York: Springer.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology*, 29(2), 75-91.
- Guggenheim, M. (2014). Introduction: Disasters as politics—Politics as disasters. *The Sociological Review*, 62(Suppl 1), 1-16.
- Guha-Sapir, D., Hoyois, P., & Below, R. (2014). *Annual disaster statistical review 2013: The numbers and trends*. Brussels: CRED.
- Haas, J. E., Kates, R. W., & Bowden, M. J. (1977). *Reconstruction following disaster*. Cambridge, MA: MIT Press.
- Häberli, I. (2013). Aid distribution after hurricane mitch and changes in social capital in two nicaraguan rural communities. In J. E. D. Barenstein & E. Leemann (Eds.), *Post-disaster reconstruction and change: Communities' perspectives* (pp. 31-54). Boca Raton, FL: CRC Press.

- Hales, B., Walzer, N., & Calvin, J. (2012). Community responses to disasters: A foundation for recovery. *Community Development, 43*(5), 540-549.
- Hall, W. A., & Callery, P. (2001). Enhancing the rigor of grounded theory: Incorporating reflexivity and relationality. *Qualitative Health Research, 11*(2), 257-272.
- Handmer, J., & Hillman, M. (2004). Economic and financial recovery from disaster. *The Australian Journal of Emergency Management, 19*(4), 44-50.
- Hanifan, L. J. (1916). The rural school community center. *Annals of the American Academy of Political and Social Science, 67*, 130-138.
- Hawkins, R. L., & Maurer, K. (2010). Bonding, bridging and linking: How social capital operated in New Orleans following Hurricane Katrina. *British Journal of Social Work, 40*(6), 1777-1793.
- Hay, R. (1998). Sense of place in developmental context. *Journal of Environmental Psychology, 18*(1), 5-29.
- Hernández, B., Hidalgo, M. C., Salazar-Laplace, M. E., & Hess, S. (2007). Place attachment and place identity in natives and non-natives. *Journal of Environmental Psychology, 27*(4), 310-319.
- Hernández, B., Martín, A. M., Ruiz, C., & del Carmen Hidalgo, M. (2010). The role of place identity and place attachment in breaking environmental protection laws. *Journal of Environmental Psychology, 30*(3), 281-288.
- Herskovits, M. F. (1955). *Cultural anthropology*. New York: Knopf.
- Hidalgo, M. C., & Hernandez, B. (2001). Place attachment: Conceptual and empirical questions. *Journal of Environmental Psychology, 21*(3), 273-281.
- Higginbottom, G., & Lauridsen, E. I. (2014). The roots and development of constructivist grounded theory. *Nurse Researcher, 21*(5), 8-13.
- Hill, J. L. (1996). Psychological sense of community: Suggestions for future research. *Journal of Community Psychology, 24*(4), 431-438.
- Hillery, G. A. (1955). Definitions of community: Areas of agreement. *Rural Sociology, 20*(2), 111-123.
- Hillery, G. A. (1963). Villages, cities, and total institutions. *American Sociological Review, 28*(5), 779-791.

- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513-524.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review*, 50(3), 337-421.
- Hobfoll, S. E. (2011). Conservation of resources theory: Its implication for stress, health, and resilience. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 127-147). New York: Oxford University Press.
- Hobfoll, S. E. (2012). Conservation of resources and disaster in cultural context: The caravans and passageways for resources. *Psychiatry*, 75(3), 227-232.
- Hoffman, S. M. (1999a). After Atlas shrugs: Cultural change or persistence after a disaster. In A. Oliver-Smith & S. M. Hoffman (Eds.), *The angry earth: Disaster in anthropological perspective* (pp. 302-326). New York: Routledge.
- Hoffman, S. M. (1999b). The worst of times, the best of times: Toward a model of cultural response to disaster. In A. Oliver-Smith & S. M. Hoffman (Eds.), *The angry earth: Disaster in anthropological perspective* (pp. 134-155). New York: Routledge.
- Hofstede, G. (1980). *Culture's consequences: International differences in work related-values*. Beverly Hills, CA: Sage.
- Hombrados-Mendieta, M. I., Gomez-Jacinto, L., Dominguez-Fuentes, J. M., & Garcia-Leiva, P. (2013). Sense of community and satisfaction with life among immigrants and the native population. *Journal of Community Psychology*, 41(5), 601-614.
- Hong, Y.-y. (2009). A dynamic constructivist approach to culture: Moving from describing culture to explaining culture. In R. S. Wyer, C.-y. Chiu, & Y.-y. Hong (Eds.), *Understanding culture: Theory, research, and application* (pp. 3-23). New York: Psychology Press.
- Hori, M., & Schafer, M. (2010). Social costs of displacement in Louisiana after Hurricanes Katrina and Rita. *Population & Environment*, 31(1-3), 64-86.
- Howarth, C. S. (2001). Towards a social psychology of community: A social representations perspective. *Journal for the Theory of Social Behaviour*, 31(2), 223-238.
- Huang, Y., & Wong, H. (2014). Impacts of sense of community and satisfaction with governmental recovery on psychological status of the Wenchuan earthquake survivors. *Social Indicators Research*, 117(2), 421-436.

- Hughey, J., Speer, P. W., & Peterson, N. A. (1999). Sense of community in community organizations: Structure and evidence of validity. *Journal of Community Psychology, 27*(1), 97-113.
- Hull, R. B., Lam, M., & Vigo, G. (1994). Place identity: Symbols of self in the urban fabric. *Landscape and Urban Planning, 28*(2), 109-120.
- Hutchins, G. L., & Norris, F. H. (1989). Life change in the disaster recovery period. *Environment and Behavior, 21*(1), 33-56.
- Jacobs, G. A., & Meyer, D. L. (2006). Psychological first aid: Clarifying the concept. In L. Barbanel & R. J. Sternberg (Eds.), *Psychological interventions in times of crisis* (pp. 57-71). New York: Springer.
- Jahoda, G. (2012). Critical reflections on some recent definitions of “culture”. *Culture & Psychology, 18*(3), 289-303.
- Janssen, M., Lee, J., Bharosa, N., & Cresswell, A. (2010). Advances in multi-agency disaster management: Key elements in disaster research. *Information Systems Frontiers, 12*(1), 1-7.
- Jarrett, R. L., Sullivan, P. J., & Watkins, N. D. (2005). Developing social capital through participation in organized youth programs: Qualitative insights from three programs. *Journal of Community Psychology, 33*(1), 41-55.
- Johnston, D., Becker, J., & Paton, D. (2012). Multi-agency community engagement during disaster recovery: Lessons from two New Zealand earthquake events. *Disaster Prevention and Management, 21*(2), 252-268.
- Jordan, E., & Javernick-Will, A. (2013). Indicators of community recovery: Content analysis and Delphi approach. *Natural Hazards Review, 14*(1), 21-28.
- Jordan, E., Javernick-Will, A., & Amadei, B. (2014). A qualitative comparative analysis of neighborhood recovery following Hurricane Katrina. *International Journal of Disaster Resilience in the Built Environment, 5*(4), 391-412.
- Jorgensen, B. S., & Stedman, R. C. (2006). A comparative analysis of predictors of sense of place dimensions: Attachment to, dependence on, and identification with lakeshore properties. *Journal of Environmental Management, 79*(3), 316-327.
- Kaniasty, K. (2012). Predicting social psychological well-being following trauma: The role of postdisaster social support. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*(1), 22-33.

- Kaniasty, K., & Norris, F. (1999). The experience of disaster: Individuals and communities sharing trauma. In R. Gist & B. Lubin (Eds.), *Response to disaster: Psychosocial, community, and ecological approaches* (pp. 25-61). Philadelphia: Brunner/Mazel.
- Kaniasty, K., & Norris, F. H. (1995). Mobilization and deterioration of social support following natural disasters. *Current Directions in Psychological Science*, 4(3), 94-98.
- Kaniasty, K., & Norris, F. H. (2004). Social support in the aftermath of disasters, catastrophes, and acts of terrorism: Altruistic, overwhelmed, uncertain, antagonistic, and patriotic communities. In R. J. Ursano, A. E. Norwood, & C. S. Fullerton (Eds.), *Bioterrorism: Psychological and public health interventions* (pp. 200-229). New York: Cambridge University Press.
- Kashima, Y., & Gelfand, M. J. (2012). A history of culture in psychology. In A. W. Kruglanski & W. Stroebe (Eds.), *Handbook of the history of social psychology* (pp. 499-520). New York: Psychology Press.
- Kato, H. (2012). Local civilization and political decency: Equilibrium and the position of the Sultanate in Java. *Comparative Civilizations Review*, 66(66), 45-57.
- Keesing, R. M. (1974). Theories of culture. *Annual Review of Anthropology*, 3, 73-97.
- Kelly, J. G. (2006). *Becoming ecological: An expedition into community psychology*. New York: Oxford University Press.
- Kiliç, C., Aydin, I., Taşkintuna, N., Özçürümez, G., Kurt, G., Eren, E., . . . Zileli, L. (2006). Predictors of psychological distress in survivors of the 1999 earthquakes in Turkey: Effects of relocation after the disaster. *Acta Psychiatrica Scandinavica*, 114(3), 194-202.
- Killian, L. M. (1954). Some accomplishments and some needs in disaster study. *Journal of Social Issues*, 10(3), 66-72.
- Kim, J., & Kaplan, R. (2004). Physical and psychological factors in sense of community new urbanist Kentlands and nearby Orchard Village. *Environment and Behavior*, 36(3), 313-340.
- Klitzsch, N. (2014). Disaster politics or disaster of politics? Post-tsunami conflict transformation in Sri Lanka and Aceh, Indonesia. *Cooperation & Conflict*, 49(4), 554-573.
- Koentjaraningrat. (1961). *Some social-anthropological observations of gotong rojong practices in two villages of Central Java*: Modern Indonesia Project, Southeast Asia Program, Department of Far Eastern Studies, Cornell University.

- Koentjaraningrat. (1985). *Javanese culture*. Singapore: Oxford University Press.
- Koh, H. K., & Cadigan, R. O. (2008). Disaster preparedness and social capital. In I. Kawachi, S. V. Subramanian, & D. Kim (Eds.), *Social capital and health* (pp. 273-285). New York: Springer.
- Konner, M. (2010). Evolutionary foundations of cultural psychology. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 77-105). New York: The Guilford Press.
- Korpela, K. M. (1989). Place-identity as a product of environmental self-regulation. *Journal of Environmental Psychology, 9*(3), 241-256.
- Kral, M. J., García, J. I. R., Aber, M. S., Masood, N., Dutta, U., & Todd, N. R. (2011). Culture and community psychology: Toward a renewed and reimagined vision. *American Journal of Community Psychology, 47*(1-2), 46-57.
- Kroeber, A. L., & Kluckhohn, C. (1952). *Culture: A critical review of concepts and definitions*. Cambridge, MA: Peabody Museum of Archaeology & Ethnology.
- Kroeber, A. L., & Parsons, T. (1958). The concepts of culture and of social system. *American Sociological Review, 23*(5), 582-583.
- Kusumasari, B., & Alam, Q. (2012). Local wisdom-based disaster recovery model in Indonesia. *Disaster Prevention and Management: An International Journal, 21*(3), 351-369.
- Kyle, G., Graefe, A., & Manning, R. (2005). Testing the dimensionality of place attachment in recreational settings. *Environment and Behavior, 37*(2), 153-177.
- Kyle, G. T., Mowen, A. J., & Tarrant, M. (2004). Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology, 24*(4), 439-454.
- Lalli, M. (1992). Urban-related identity: Theory, measurement, and empirical findings. *Journal of Environmental Psychology, 12*(4), 285-303.
- LaLone, M. B. (2012). Neighbors helping neighbors an examination of the social capital mobilization process for community resilience to environmental disasters. *Journal of Applied Social Science, 6*(2), 209-237.
- Lang, R. E., & Hornburg, S. P. (1998). What is social capital and why is it important to public policy? *Housing Policy Debate, 9*(1), 1-16.

- Lavigne, F., De Coster, B., Juvin, N., Flohic, F., Gaillard, J.-C., Texier, P., . . . Sartohadi, J. (2008). People's behaviour in the face of volcanic hazards: Perspectives from Javanese communities, Indonesia. *Journal of Volcanology and Geothermal Research*, *172*(3), 273-287.
- Leon, G. R. (2004). Overview of the psychosocial impact of disasters. *Prehospital and Disaster Medicine*, *19*(1), 4-9.
- Lewicka, M. (2005). Ways to make people active: The role of place attachment, cultural capital, and neighborhood ties. *Journal of Environmental Psychology*, *25*(4), 381-395.
- Lewicka, M. (2008). Place attachment, place identity, and place memory: Restoring the forgotten city past. *Journal of Environmental Psychology*, *28*(3), 209-231.
- Lewicka, M. (2011a). On the varieties of people's relationships with places: Hummon's typology revisited. *Environment and Behavior*, *43*(5), 676-709.
- Lewicka, M. (2011b). Place attachment: How far have we come in the last 40 years? *Journal of Environmental Psychology*, *31*(3), 207-230.
- Li, Y., Sun, F., & Chan, K. S. (2011). Sense of community and depressive symptoms among older earthquake survivors following the 2008 earthquake in Chengdu China. *Journal of Community Psychology*, *39*(7), 776-785.
- Lin, N. (2008). A network theory of social capital. In D. Castiglione, J. W. van Deth, & G. Wolleb (Eds.), *The handbook of social capital* (pp. 50-69). New York: Oxford University Press.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, California: Sage Publications.
- Lindell, M. K. (2013). Disaster studies. *Current Sociology*, *61*(5-6), 797-825.
- Lindell, M. K., & Prater, C. S. (2003). Assessing community impacts of natural disasters. *Natural Hazards Review*, *4*(4), 176-185.
- Lochner, K., Kawachi, I., & Kennedy, B. P. (1999). Social capital: A guide to its measurement. *Health & Place*, *5*(4), 259-270.
- Long, D. A., & Perkins, D. D. (2003). Confirmatory factor analysis of the sense of community index and development of a brief SCI. *Journal of Community Psychology*, *31*(3), 279-296.

- Long, D. A., & Perkins, D. D. (2007). Community social and place predictors of sense of community: A multilevel and longitudinal analysis. *Journal of Community Psychology, 35*(5), 563-581.
- Loomis, C., Dockett, K. H., & Brodsky, A. E. (2004). Change in sense of community: An empirical finding. *Journal of Community Psychology, 32*(1), 1-8.
- Lorion, R. P., & Newbrough, J. (1996). Psychological sense of community: The pursuit of a field's spirit. *Journal of Community Psychology, 24*(4), 311-314.
- Low, S. M. (1992). Symbolic ties that bind: Place attachment in the plaza. In I. Altman & S. M. Low (Eds.), *Place attachment* (pp. 165-185). New York: Plenum Press.
- Mak, W. W., Cheung, R. Y., & Law, L. S. (2009). Sense of community in Hong Kong: Relations with community-level characteristics and residents' well-being. *American Journal of Community Psychology, 44*(1-2), 80-92.
- Mancini, J. A., Martin, J. A., & Bowen, G. L. (2003). Community capacity. In T. P. Gullota & M. Bloom (Eds.), *Encyclopedia of primary prevention and health promotion* (pp. 319-330). New York: Springer.
- Mannarini, T., Rochira, A., & Talò, C. (2014). Negative psychological sense of community: Development of a measure and theoretical implications. *Journal of Community Psychology, 42*(6), 673-688.
- Manzo, L. C. (2005). For better or worse: Exploring multiple dimensions of place meaning. *Journal of Environmental Psychology, 25*(1), 67-86.
- Manzo, L. C., & Perkins, D. D. (2006). Finding common ground: The importance of place attachment to community participation and planning. *Journal of Planning Literature, 20*(4), 335-350.
- Marsella, A. J., Johnson, J. L., Watson, P. J., & Gryczynski, J. (2008). Essentials concepts and foundations. In A. J. Marsella, J. L. Johnson, P. J. Watson, & J. Gryczynski (Eds.), *Ethnocultural perspectives on disaster and trauma* (pp. 3-13). New York: Springer.
- Martín-Baró, I. (1994). Towards a liberation psychology (A. Aron, Trans.). In A. Aron & S. Corne (Eds.), *Writings for a liberation psychology: Ignacio Martín-Baró*. Cambridge, MA: Harvard University Press.
- Masten, A. S., & Obradovic, J. (2008). Disaster preparation and recovery: Lessons from research on resilience in human development. *Ecology and Society, 13*(1), 9-24.

- Mauthner, N. S., & Doucet, A. (2003). Reflexive accounts and accounts of reflexivity in qualitative data analysis. *Sociology*, 37(3), 413-431.
- Mazumdar, S., & Mazumdar, S. (2004). Religion and place attachment: A study of sacred places. *Journal of Environmental Psychology*, 24(3), 385-397.
- McFarlane, A., van Hooff, M., & Goodhew, F. (2009). Anxiety disorders and PTSD. In Y. Neria, S. Galea, & F. H. Norris (Eds.), *Mental health and disasters* (pp. 47-66). New York: Cambridge University Press.
- McFarlane, A. C., & Norris, F. H. (2006). Definitions and concepts in disaster research. In F. H. Norris, S. Galea, M. J. Friedman, & P. J. Watson (Eds.), *Methods for disaster mental health research* (pp. 3-19). New York: The Guilford Press.
- McKenzie, K., Whitley, R., & Weich, S. (2002). Social capital and mental health. *The British Journal of Psychiatry*, 181(4), 280-283.
- McMillan, D. W. (1996). Sense of community. *Journal of Community Psychology*, 24(4), 315-325.
- McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14(1), 6-23.
- Mei, E. T. W., & Lavigne, F. (2012). Influence of the institutional and socio-economic context for responding to disasters: Case study of the 1994 and 2006 eruptions of the Merapi Volcano, Indonesia. *Geological Society, London, Special Publications*, 361, 171-186.
- Mei, E. T. W., Lavigne, F., Picquout, A., de Bélizal, E., Brunstein, D., Grancher, D., . . . Vidal, C. (2013). Lessons learned from the 2010 evacuations at Merapi volcano. *Journal of Volcanology and Geothermal Research*, 261, 348-365.
- Mihaylov, N., & Perkins, D. D. (2013). Community place attachment and its role in social capital development. In L. C. Manzo & P. Devine-Wright (Eds.), *Place attachment: Advances in theory, methods and applications* (pp. 61-74). New York: Routledge.
- Miles, S. B., & Chang, S. E. (2006). Modeling community recovery from earthquakes. *Earthquake Spectra*, 22(2), 439-458.
- Milligan, M. J. (1998). Interactional past and potential: The social construction of place attachment. *Symbolic Interaction*, 21(1), 1-33.
- Milligan, M. J. (2003). Displacement and identity discontinuity: The role of nostalgia in establishing new identity categories. *Symbolic Interaction*, 26(3), 381-403.

- Milliken, P. J., & Schreiber, R. (2012). Examining the nexus between grounded theory and symbolic interactionism. *International Journal of Qualitative Methods, 11*(5), 684-696.
- Mishra, S., Mazumdar, S., & Suar, D. (2010). Place attachment and flood preparedness. *Journal of Environmental Psychology, 30*(2), 187-197.
- Misra, G., & Gergen, K. J. (1993). On the place of culture in psychological science. *International Journal of Psychology, 28*(2), 225-243.
- Mitchell, C. M., Esnard, A.-M., & Sapat, A. (2012). Hurricane events, population displacement, and sheltering provision in the United States. *Natural Hazard Review, 13*(2), 150-161.
- Mitchell, D. (2010). Land tenure and disaster risk management. *Land Tenure Journal, 1*(1), 121-141.
- Moore, H. E. (1958). *Tornadoes over Texas: A study of Waco and San Angelo in disaster*. Austin: University of Texas Press.
- Moore, S., Daniel, M., Linnan, L., Campbell, M., Benedict, S., & Meier, A. (2004). After Hurricane Floyd passed: Investigating the social determinants of disaster preparedness and recovery. *Family & Community Health, 27*(3), 204-217.
- Morgan, P. (2010). Towards a developmental theory of place attachment. *Journal of Environmental Psychology, 30*(1), 11-22.
- Morris, A. J. (2011). Psychic aftershocks: Crisis counseling and disaster relief policy. *History of Psychology, 14*(3), 264-286.
- Morrow, S. L. (2005). Quality and trustworthiness in qualitative research in counseling psychology. *Journal of Counseling Psychology, 52*(2), 250-260.
- Moscovici, S. (1988). Notes towards a description of social representations. *European Journal of Social Psychology, 18*(3), 211-250.
- Mukherji, A. (2014). Post-disaster housing recovery: The promise and peril of social capital. *Journal of Civil Society, 10*(2), 119-143.
- Murtisari, E. T. (2013). Some traditional Javanese values in NSM: From God to social interaction. *International Journal of Indonesian Studies, 1*, 110-125.
- Najarian, L. M., Goenjian, A. K., Pelcovitz, D., Mandel, F., & Najarian, B. (2001). The effect of relocation after a natural disaster. *Journal of Traumatic Stress, 14*(3), 511-526.

- Nakagawa, S., & Suwa, K. (2010). A cultural approach to recovery assistance following urban disasters. *City, Culture and Society*, 1(1), 27-36.
- Nakagawa, Y., & Shaw, R. (2004). Social capital: A missing link to disaster recovery. *International Journal of Mass Emergencies and Disasters*, 22(1), 5-34.
- Nasar, J. L., & Julian, D. A. (1995). The psychological sense of community in the neighborhood. *Journal of the American Planning Association*, 61(2), 178-184.
- Nazaruddin, M. (2013). *Natural hazard and semiotic changes on the slope of Mt. Merapi, Indonesia*. (Unpublished Master's Thesis), University of Tartu.
- Neal, J. W., & Christens, B. D. (2014). Linking the levels: Network and relational perspectives for community psychology. *American Journal of Community Psychology*, 53(3-4), 314-323.
- Neal, Z. P., & Neal, J. W. (2014). The (In) compatibility of diversity and sense of community. *American Journal of Community Psychology*, 53(1-2), 1-12.
- Neria, Y., Nandi, A., & Galea, S. (2008). Post-traumatic stress disorder following disasters: A systematic review. *Psychological Medicine*, 38(04), 467-480.
- Newbrough, J. (1995). Toward community: A third position. *American Journal of Community Psychology*, 23(1), 9-37.
- Nigg, J. M. (1995). Disaster recovery as a social process. In G. Gregory (Ed.), *Wellington after the quake: The challenge of rebuilding cities* (pp. 81-92). Wellington: Earthquake Commission and the Centre for Advanced Engineering.
- Norris, F. H. (2012). Four meanings of “community” in disaster. In C. S. Widom (Ed.), *Trauma, psychopathology, and violence: Causes, correlates, or consequences?* (pp. 161-185). New York: Oxford University Press.
- Norris, F. H., Baker, C. K., Murphy, A. D., & Kaniasty, K. (2005). Social support mobilization and deterioration after Mexico's 1999 flood: Effects of context, gender, and time. *American Journal of Community Psychology*, 36(1-2), 15-28.
- Norris, F. H., & Elrod, C. L. (2006). Psychosocial consequences of disaster: A review of past research. In F. H. Norris, S. Galea, M. J. Friedman, & P. J. Watson (Eds.), *Methods for disaster mental health research* (pp. 20-42). New York: The Guilford Press.

- Norris, F. H., Friedman, M. J., & Watson, P. J. (2002). 60,000 Disaster victims speak: Part II. Summary and implications of the disaster mental health research. *Psychiatry*, *65*(3), 240-260.
- Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., & Kaniasty, K. (2002). 60,000 Disaster victims speak: Part I. An empirical review of the empirical literature, 1981–2001. *Psychiatry*, *65*(3), 207-239.
- Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, *41*(1-2), 127-150.
- Nowell, B., & Boyd, N. (2010). Viewing community as responsibility as well as resource: Deconstructing the theoretical roots of psychological sense of community. *Journal of Community Psychology*, *38*(7), 828-841.
- Nowell, B. L., Berkowitz, S. L., Deacon, Z., & Foster-Fishman, P. (2006). Revealing the cues within community places: Stories of identity, history, and possibility. *American Journal of Community Psychology*, *37*(1-2), 29-46.
- O'Brien, G., O'Keefe, P., Gadema, Z., & Swords, J. (2010). Approaching disaster management through social learning. *Disaster Prevention and Management*, *19*(4), 498-508.
- Obst, P., Smith, S. G., & Zinkiewicz, L. (2002). An exploration of sense of community, Part 3: Dimensions and predictors of psychological sense of community in geographical communities. *Journal of Community Psychology*, *30*(1), 119-133.
- Obst, P. L., & White, K. M. (2004). Revisiting the sense of community index: A confirmatory factor analysis. *Journal of Community Psychology*, *32*(6), 691-705.
- Okazaki, S., David, E., & Abelmann, N. (2008). Colonialism and psychology of culture. *Social and Personality Psychology Compass*, *2*(1), 90-106.
- Okazaki, S., & Saw, A. (2011). Culture in Asian American community psychology: Beyond the East–West binary. *American Journal of Community Psychology*, *47*(1-2), 144-156.
- Oliver-Smith, A. (1996). Anthropological research on hazards and disasters. *Annual Review of Anthropology*, *25*, 303-328.
- Oliver-Smith, A. (1999). "What is a disaster?": Anthropological perspectives on a persistent question. In A. Oliver-Smith & S. Hoffman (Eds.), *The angry earth: Disaster in anthropological perspective* (pp. 18-34). New York: Routledge.

- Oliver-Smith, A. (2011). The centrality of culture in post-disaster reconstruction. In B. K. Goldewijk, G. Frerks, & E. van der Plas (Eds.), *Cultural emergency in conflict and disaster* (pp. 228-232). The Hague: NAI Publishers-Prince Claus Fund.
- Olshansky, R. B. (2005). *How do communities recover from disaster? A review of current knowledge and an agenda for future research*. Paper presented at the the 46th Annual Conference of the Association of Collegiate Schools of Planning, Kansas City, MO.
- Olshansky, R. B., & Chang, S. (2009). Planning for disaster recovery: Emerging research needs and challenges. *Progress in Planning*, 72(4), 200-209.
- Olshansky, R. B., Hopkins, L. D., & Johnson, L. A. (2012). Disaster and recovery: Processes compressed in time. *Natural Hazards Review*, 13(3), 173-178.
- Omoto, A. M., & Malsch, A. M. (2005). Psychological sense of community: Conceptual issues and connections to volunteerism-related activism. In A. M. Omoto (Ed.), *Processes of community change and social action* (pp. 83-103). Mahwah, NJ: Erlbaum.
- Omoto, A. M., & Packard, C. D. (2016). The power of connections: Psychological sense of community as a predictor of volunteerism. *The Journal of Social Psychology*, 156(3), 272-290.
- Onstad, P. A., Danes, S. M., Hardman, A. M., Olson, P. D., Marczak, M. S., Coffee, K. A., . . . Croymans, S. R. (2012). The road to recovery from a natural disaster: Voices from the community. *Community Development*, 43(5), 566-580.
- Ortner, S. B. (1984). Theory in anthropology since the sixties. *Comparative Studies in Society and History*, 26(1), 126-166.
- Ortner, S. B. (2006). *Anthropology and social theory: Culture, power, and the acting subject*. Durham: Duke University Press.
- Paasi, A. (2002). Place and region: Regional worlds and words. *Progress in Human Geography*, 26(6), 802-811.
- Pais, J. F., & Elliott, J. R. (2008). Places as recovery machines: Vulnerability and neighborhood change after major hurricanes. *Social Forces*, 86(4), 1415-1453.
- Palinkas, L. (2006). Qualitative approaches to studying the effects of disasters. In F. H. Norris, S. Galea, M. J. Friedman, & P. Watson (Eds.), *Methods for disaster mental health research* (pp. 158-173). New York: Guilford.

- Pallí, C. (2003). Communities in context: Undefinedness, multiplicity and cultural difference. *Revista Interamericana de Psicología/Interamerican Journal of Psychology*, 37(2), 309-326.
- Palmer, N. A., Perkins, D. D., & Xu, Q. (2011). Social capital and community participation among migrant workers in China. *Journal of Community Psychology*, 39(1), 89-105.
- Paton, D. (2001). Responding to hazard effects: Promoting resilience and adjustment adoption. *Australian Journal of Emergency Management*, 16(1), 47-52.
- Peacock, W. G., Dash, N., & Zhang, Y. (2007). Sheltering and housing recovery following disaster. In H. Rodríguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *Handbook of disaster research* (pp. 258-274). New York: Springer.
- Peek, L. A., & Mileti, D. S. (2002). The history and future of disaster research. In R. B. Bechtel & A. Churchman (Eds.), *Handbook of environmental psychology* (pp. 511-524). New York: John Wiley & Sons.
- Pelupessy, D., & Bretherton, D. (2015). Disaster, mental health, and community resilience: Lessons from the field in Aceh Province, Indonesia. In C. Brassard, D. W. Giles, & A. M. Howitt (Eds.), *Natural disaster management in the Asia-Pacific* (pp. 139-155). Tokyo: Springer.
- Pelupessy, D., Ride, A., & Bretherton, D. (2011). Indonesia. In A. Ride & D. Bretherton (Eds.), *Community resilience in natural disasters* (pp. 19-49). New York: Springer.
- Perkins, D. D., Florin, P., Rich, R. C., Wandersman, A., & Chavis, D. M. (1990). Participation and the social and physical environment of residential blocks: Crime and community context. *American Journal of Community Psychology*, 18(1), 83-115.
- Perkins, D. D., Hughey, J., & Speer, P. W. (2002). Community psychology perspectives on social capital theory and community development practice. *Community Development*, 33(1), 33-52.
- Perkins, D. D., & Long, D. A. (2002). Neighborhood sense of community and social capital. In A. T. Fisher, C. C. Sonn, & B. J. Bishop (Eds.), *Psychological sense of community* (pp. 291-318): Kluwer Academic/Plenum Publishers.
- Perry, R. W. (2007). What is a disaster? In H. Rodríguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *Handbook of disaster research* (pp. 1-15). New York: Springer.
- Perry, R. W., & Godchaux, J. D. (2005). Volcano hazard management strategies: Fitting policy to patterned human responses. *Disaster Prevention and Management*, 14(2), 183-195.

- Peterson, N. A., Speer, P. W., & Hughey, J. (2006). Measuring sense of community: A methodological interpretation of the factor structure debate. *Journal of Community Psychology, 34*(4), 453-469.
- Peterson, N. A., Speer, P. W., & McMillan, D. W. (2008). Validation of a brief sense of community scale: Confirmation of the principal theory of sense of community. *Journal of Community Psychology, 36*(1), 61-73.
- Phillips, B. D. (2011). *Disaster recovery*. Boca Raton, FL: CRC Press.
- Phillips, B. D. (2014). *Qualitative disaster research*. New York: Oxford University Press.
- Phillips, B. D., Neal, D. M., & Webb, G. (2012). *Introduction to emergency management*. Boca Raton, FL: CRC Press.
- Phinney, J. S. (1996). When we talk about American ethnic groups, what do we mean? *American Psychologist, 51*(9), 918-927.
- Picou, J. S. (2009). Disaster recovery as translational applied sociology: Transforming chronic community distress. *Humboldt Journal of Social Relations, 32*(1), 123-157.
- Plas, J. M., & Lewis, S. E. (1996). Environmental factors and sense of community in a planned town. *American Journal of Community Psychology, 24*(1), 109-143.
- Pollack, C. E., & von dem Knesebeck, O. (2004). Social capital and health among the aged: Comparisons between the United States and Germany. *Health and Place, 10*(4), 383-391.
- Pooley, J. A., Cohen, L., & Pike, L. T. (2005). Can sense of community inform social capital? *The Social Science Journal, 42*(1), 71-79.
- Poortinga, Y. H. F., van de Vijver, F. J. R. C., Joe, R. C., & van de Koppel, J. M. H. (1987). Peeling the onion called culture: A synopsis. In Ç. Kâğıtçıbaşı (Ed.), *Growth and progress cross-cultural psychology* (pp. 22-34). Lisse: Swets & Zeitlinger.
- Porfiriev, B. N. (1998). Issues in the definition and delineation of disasters and disaster areas. In E. L. Quarantelli (Ed.), *What is a disaster? Perspectives on the questions* (pp. 51-67). New York: Routledge.
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology, 24*, 1-24.

- Portes, A. (2000). The two meanings of social capital. *Sociological Forum*, 15(1), 1-12.
- Pretty, G., Bishop, B. J., Fisher, A., & Sonn, C. (2006). Psychological sense of community and its relevance to well-being and everyday life in Australia. *The Australian Community Psychologist*, 19(2), 6-25.
- Pretty, G. H., Chipuer, H. M., & Bramston, P. (2003). Sense of place amongst adolescents and adults in two rural Australian towns: The discriminating features of place attachment, sense of community and place dependence in relation to place identity. *Journal of Environmental Psychology*, 23(3), 273-287.
- Pretty, G. M. (2002). Young people's development of the community-minded self. In A. T. Fisher, C. C. Sonn, & B. J. Bishop (Eds.), *Psychological sense of community: Research, applications, and implications* (pp. 183-203). New York: Kluwer Academic/Plenum Publishers.
- Pretty, G. M., Andrewes, L., & Collett, C. (1994). Exploring adolescents' sense of community and its relationship to loneliness. *Journal of Community Psychology*, 22(4), 346-358.
- Prewitt Diaz, J. O. (2013). Recovery: Re-establishing place and community resilience. *Global Journal of Community Psychology Practice*, 4(3), 1-10.
- Prezza, M., Amici, M., Roberti, T., & Tedeschi, G. (2001). Sense of community referred to the whole town: Its relations with neighboring, loneliness, life satisfaction, and area of residence. *Journal of Community Psychology*, 29(1), 29-52.
- Prince, S. H. (1920). *Catastrophe and social change, based upon a sociological study of the Halifax disaster*. New York: Columbia University.
- Proshansky, H. M., Fabian, A. K., & Kaminoff, R. (1983). Place-identity: Physical world socialization of the self. *Journal of Environmental Psychology*, 3(1), 57-83.
- Puddifoot, J. E. (1995). Dimensions of community identity. *Journal of Community & Applied Social Psychology*, 5(5), 357-370.
- Puddifoot, J. E. (1996). Some initial considerations in the measurement of community identity. *Journal of Community Psychology*, 24(4), 327-336.
- Putnam, R. D. (1993). What makes democracy work? *National Civic Review*, 82(2), 101-107.

- Putnam, R. D. (1995). Tuning in, tuning out: The strange disappearance of social capital in America. *PS: Political Science and Politics*, 28(4), 664-683.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.
- Pyysiäinen, I. (2002). Ontology of culture and the study of human behavior. *Journal of Cognition and Culture*, 2(3), 167-182.
- Quarantelli, E. L. (1978). Some basic themes in sociological studies of disasters. In E. L. Quarantelli (Ed.), *Disasters: Theory and research* (pp. 1-14). Beverly Hills, California: Sage.
- Quarantelli, E. L. (1982). *Sheltering and housing after major community disasters: Case studies and general observations*. Disaster Research Center, University of Delaware.
- Quarantelli, E. L. (1985). What is disaster? The need for clarification in definition and conceptualization in research. In B. Sowder (Ed.), *Disaster and mental health selected contemporary perspectives* (pp. 41-73). Rockville, MD: Center for Mental Health Studies of Emergencies, National Institutes of Mental Health.
- Quarantelli, E. L. (1987). What should we study? Questions and suggestions for researchers about the concept of disasters. *International Journal of Mass Emergencies and Disasters*, 5(1), 7-32.
- Quarantelli, E. L. (1994). Disaster studies: The consequences of the historical use of a sociological approach in the developmental research. *International Journal of Mass Emergencies and Disasters*, 12(1), 25-49.
- Quarantelli, E. L. (1998). *What is a disaster? Perspectives on the questions*. New York: Routledge.
- Quarantelli, E. L. (1999). *The disaster recovery process: What we know and do not know from research*. Preliminary Paper No. 286. Disaster Research Center, University of Delaware.
- Quarantelli, E. L. (2005). A social science research agenda for the disasters of the 21st century: Theoretical, methodological and empirical issues and their professional implementation. In R. W. Perry & E. L. Quarantelli (Eds.), *What is a disaster? New answers to old questions* (pp. 325-396). Bloomington, IN: Xlibris.
- Rahill, G. J., Ganapati, N. E., Clérismé, J. C., & Mukherji, A. (2014). Shelter recovery in urban Haiti after the earthquake: The dual role of social capital. *Disasters*, 38(s1), S73-S93.

- Rappaport, J. (2000). Community narratives: Tales of terror and joy. *American Journal of Community Psychology*, 28(1), 1-24.
- Ras, J. J. (1987). The genesis of the Babad Tanah Jawi: Origin and function of the Javanese court chronicle. *Bijdragen tot de Taal-, Land-en Volkenkunde*(2/3), 343-356.
- Reckwitz, A. (2002). The status of the “material” in theories of culture: From “social structure” to “artefacts”. *Journal for the Theory of Social Behaviour*, 32(2), 195-217.
- Reininger, B. M., Rahbar, M. H., Lee, M., Chen, Z., Alam, S. R., Pope, J., & Adams, B. (2013). Social capital and disaster preparedness among low income Mexican Americans in a disaster prone area. *Social Science & Medicine*, 83, 50-60.
- Relph, E. (1976). *Place and placelessness*. London: Pion.
- Riad, J. K., & Norris, F. H. (1996). The influence of relocation on the environmental, social, and psychological stress experienced by disaster victims. *Environment and Behavior*, 28(2), 163-182.
- Ricklefs, M. C. (1998). Islamising Java: The long shadow of Sultan Agung. *Archipel*, 56(1), 469-482.
- Riger, S. (2001). Transforming community psychology. *American Journal of Community Psychology*, 29(1), 69-81.
- Riger, S., & Lavrakas, P. J. (1981). Community ties: Patterns of attachment and social interaction in urban neighborhoods. *American Journal of Community Psychology*, 9(1), 55-66.
- Riley, R. B. (1992). Attachment to the ordinary landscape. In I. Altman & S. M. Low (Eds.), *Place attachment* (pp. 13-35). New York: Plenum Press.
- Rivera, F. I. (2012). Cultural mechanisms in the exchange of social support among Puerto Ricans after a natural disaster. *Qualitative Health Research*, 22(6), 801-809.
- Rodman, M. C. (1992). Empowering place: Multilocality and multivocality. *American Anthropologist*, 94(3), 640-656.
- Rohner, R. P. (1984). Toward a conception of culture for cross-cultural psychology. *Journal of Cross-Cultural Psychology*, 15(2), 111-138.

- Rolfe, G. (2006). Validity, trustworthiness and rigour: Quality and the idea of qualitative research. *Journal of Advanced Nursing*, 53(3), 304-310.
- Rollero, C., & De Piccoli, N. (2010). Does place attachment affect social well-being? *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology*, 60(4), 233-238.
- Rowles, G. D. (1983). Place and personal identity in old age: Observations from Appalachia. *Journal of Environmental Psychology*, 3(4), 299-313.
- Roy, N., Thakkar, P., & Shah, H. (2011). Developing-world disaster research: Present evidence and future priorities. *Disaster Medicine and Public Health Preparedness*, 5(2), 112-116.
- Rubin, C. B. (1985). The community recovery process in the United States after a major natural disaster. *International Journal of Mass Emergencies and Disasters*, 3(2), 9-28.
- Ruiz, C., & Hernandez, B. (2014). Emotions and coping strategies during an episode of volcanic activity and their relations to place attachment. *Journal of Environmental Psychology*, 38, 279-287.
- Ruzek, J. I., Brymer, M. J., Jacobs, A. K., & Layne, C. M. (2007). Psychological first aid. *Journal of Mental Health Counseling*, 29(1), 17-49.
- Saegert, S., & Winkel, G. (1998). Social capital and the revitalization of New York City's distressed inner-city housing. *Housing Policy Debate*, 9(1), 17-60.
- Saegert, S., & Winkel, G. (2004). Crime, social capital, and community participation. *American Journal of Community Psychology*, 34(3-4), 219-233.
- Salkind, N. J. (2010). *Encyclopedia of research design* (Vol. 3). Thousand Oaks, California: Sage Publications.
- Sarason, S. B. (1974). *The psychological sense of community: Prospects for a community psychology*. San Francisco: Jossey-Bass.
- Sarason, S. B. (1986). The emergence of a conceptual center. *Journal of Community Psychology*, 14(4), 405-407.
- Sarbin, T. R. (1983). Place identity as a component of self: An addendum. *Journal of Environmental Psychology*, 3(4), 337-342.
- Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30(1), 1-10.

- Schlehe, J. (1996). Reinterpretations of mystical traditions: Explanations of a volcanic eruption in Java. *Anthropos*, 91, 391-409.
- Schlehe, J. (2008). Cultural politics of natural disasters: Discourses on volcanic eruptions in Indonesia. In M. J. Casimir (Ed.), *Culture and the changing environment: Uncertainty, cognition, and risk management in cross-cultural perspective* (pp. 275-300). Oxford: Berghahn Books.
- Schlehe, J. (2010). Anthropology of religion: Disasters and the representations of tradition and modernity. *Religion*, 40(2), 112-120.
- Schneider, D. M. (1980). *American kinship: A cultural account*. Chicago: The University of Chicago Press.
- Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 189-213). Thousand Oaks, California: Sage Publications.
- Schwandt, T. A. (2007). *The Sage dictionary of qualitative inquiry* (3rd ed.). Thousand Oaks, California: Sage Publications.
- Schwartz, S. H. (2009). Culture matters: National value cultures, sources, and consequences. In R. S. Wyer, C.-y. Chiu, & Y.-y. Hong (Eds.), *Understanding culture: Theory, research, and application* (pp. 127-150). New York: Psychology Press.
- Schwarz, S. (2014a). Disaster aid distribution and social conflicts. In M. Zaumseil, S. Schwarz, M. von Vacano, G. B. Sullivan, & J. E. Prawitasari-Hadiyono (Eds.), *Cultural psychology of coping with disasters* (pp. 285-301). New York: Springer.
- Schwarz, S. (2014b). The social dimension of coping: Communal negotiations of social benefits and burdens. In M. Zaumseil, S. Schwarz, M. von Vacano, G. B. Sullivan, & J. E. Prawitasari-Hadiyono (Eds.), *Cultural psychology of coping with disasters* (pp. 203-223). New York: Springer.
- SCRA. (2010). *How to help your community recover from disaster: A manual for planning and action*. Society for Community Research and Action.
- Seamon, D. (2015). Lived emplacement and the locality of being: A return to humanistic geography. In S. Aiken & G. Valentine (Eds.), *Approaches to human geography* (pp. 35-48). London: Sage.
- Segall, M. H. (1984). More than we need to know about culture, but are afraid not to ask. *Journal of Cross-Cultural Psychology*, 15(2), 153-162.

- Segall, M. H. (1986). Culture and behavior: Psychology in global perspective. *Annual Review of Psychology*, 37(1), 523-564.
- Serino, C., Morciano, D., Scardigno, F., & Manuti, A. (2012). How communities can react to crisis: Social capital as a source of empowerment and well-being. *Global Journal of Community Psychology Practice*, 3(3), 1-14.
- Sewell, W. H. (2005). The concept(s) of culture. In G. M. Spiegel (Ed.), *Practicing history: New directions in historical writing after the linguistic turn* (pp. 76-95). New York: Routledge.
- Shaw, R., Gupta, M., & Sarma, A. (2003). Community recovery and its sustainability: Lessons from Gujarat earthquake of India. *The Australian Journal of Emergency Management*, 18(2), 28-34.
- Shinn, M. (1990). Mixing and matching: Levels of conceptualization, measurement, and statistical analysis in community research. In P. Tolan, C. Keys, F. Chertok, & L. A. Jason (Eds.), *Researching community psychology: Issues of theory and methods* (pp. 111-126). Washington, DC: American Psychological Association.
- Shinn, M., & Rapkin, B. D. (2000). Cross-level research without cross-ups in community psychology. In J. Rappaport & E. Seidman (Eds.), *Handbook of community psychology* (pp. 669-695). New York: Springer.
- Sibley, D. (1995). *Geographies of exclusion*. London: Routledge.
- Siebert, L., Simkin, T., & Kimberly, P. (2010). *Volcanoes of the world*. Berkeley and Los Angeles: University of California Press.
- Silver, A., & Grek-Martin, J. (2015). "Now we understand what community really means": Reconceptualizing the role of sense of place in the disaster recovery process. *Journal of Environmental Psychology*, 42, 32-41.
- Sjoberg, G. (1962). Disasters and social change. In G. W. Baker & D. W. Chapman (Eds.), *Man and society in disaster* (pp. 356-384). New York: Basic Books.
- Smith, G. P., & Wenger, D. (2007). Sustainable disaster recovery: Operationalizing an existing agenda. In H. Rodríguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *Handbook of disaster research* (pp. 234-257). New York: Springer.
- Sonn, C. C., & Fisher, A. T. (1996). Psychological sense of community in a politically constructed group. *Journal of Community Psychology*, 24(4), 417-430.

- Sonn, C. C., & Fisher, A. T. (1998). Sense of community: Community resilient responses to oppression and change. *Journal of Community Psychology, 26*(5), 457-472.
- Sonn, C. C., Quayle, A. F., & Kasat, P. (2015). Picturing the wheatbelt: Exploring and expressing place identity through photography. *American Journal of Community Psychology, 55*(1-2), 89-101.
- Sperber, D. (1996). *Explaining culture: A naturalistic approach*. Oxford: Blackwell.
- Stacey, M. (1969). The myth of community studies. *British Journal of Sociology, 20*(2), 134-147.
- Stedman, R. C. (2002). Toward a social psychology of place: Predicting behavior from place-based cognitions, attitude, and identity. *Environment and Behavior, 34*(5), 561-581.
- Stehr, S. D. (2001). Community recovery and reconstruction following disasters. In A. Farazmand (Ed.), *Handbook of crisis and emergency management* (pp. 419-432). New York: Marcel Dekker.
- Stofferahn, C. W. (2012). Community capitals and disaster recovery: Northwood ND recovers from an EF 4 tornado. *Community Development, 43*(5), 581-598.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, California: Sage Publications.
- Strauss, C., & Quinn, N. (1997). *A cognitive theory of cultural meaning*. Cambridge: Cambridge University Press.
- Suddaby, R. (2006). From the editors: What grounded theory is not. *Academy of Management Journal, 49*(4), 633-642.
- Sugihara, S., & Evans, G. W. (2000). Place attachment and social support at continuing care retirement communities. *Environment and Behavior, 32*(3), 400-409.
- Sullivan, J. (1991). Inventing and imagining community: Two modern Indonesian ideologies. *Working Papers 69* (Monash University. Centre of Southeast Asian Studies).
- Surono, Jousset, P., Pallister, J., Boichu, M., Buongiorno, M. F., Budisantoso, A., . . . Lavigne, F. (2012). The 2010 explosive eruption of Java's Merapi volcano—A '100-year' event. *Journal of Volcanology and Geothermal Research, 241-242*, 121-135.

- Swartz, D. (2012). *Culture and power: The sociology of Pierre Bourdieu*. Chicago: University of Chicago Press.
- Swidler, A. (1986). Culture in action: Symbols and strategies. *American Sociological Review*, 51(2), 273-286.
- Swidler, A. (1995). Cultural power and social movements. In H. Johnston & B. Klandermans (Eds.), *Social movements and culture* (pp. 25-40). Minneapolis: University of Minnesota Press.
- Swidler, A. (2001). What anchors cultural practices. In T. R. Schatzki, K. K. Cetina, & E. V. Savigny (Eds.), *The practice turn in contemporary theory* (pp. 83-101). New York: Routledge.
- Tartaglia, S. (2006). A preliminary study for a new model of sense of community. *Journal of Community Psychology*, 34(1), 25-36.
- Taylor, R. B., Gottfredson, S. D., & Brower, S. (1985). Attachment to place: Discriminant validity, and impacts of disorder and diversity. *American Journal of Community Psychology*, 13(5), 525-542.
- Tharp, R. G. (2007). A perspective on unifying culture and psychology: Some philosophical and scientific issues. *Journal of Theoretical and Philosophical Psychology*, 27(2-1), 213-233.
- Thompson, J. B. (1990). *Ideology and modern culture: Critical social theory in the era of mass communication*. Cambridge: Polity Press.
- Thouret, J.-C., Lavigne, F., Kelfoun, K., & Bronto, S. (2000). Toward a revised hazard assessment at Merapi volcano, Central Java. *Journal of Volcanology and Geothermal Research*, 100(1), 479-502.
- Tierney, K., & Oliver-Smith, A. (2012). Social dimensions of disaster recovery. *International Journal of Mass Emergencies and Disasters*, 30(2), 123-146.
- Tierney, K. J. (2007). From the margins to the mainstream? Disaster research at the crossroads. *Annual Review of Sociology*, 33(1), 503-525.
- Tobin, G. A., & Begley, C. M. (2004). Methodological rigour within a qualitative framework. *Journal of Advanced Nursing*, 48(4), 388-396.
- Tönnies, F. (1957). *Community and society* (C. P. Loomis, Trans.). New York: The Michigan State University Press.

- Townley, G., Kloos, B., Green, E. P., & Franco, M. M. (2011). Reconcilable differences? Human diversity, cultural relativity, and sense of community. *American Journal of Community Psychology, 47*, 69-85.
- Triandis, H. C. (1972). *The analysis of subjective culture*. New York: Wiley.
- Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American Psychologist, 51*(4), 407-415.
- Triandis, H. C., Malpass, R. S., & Davidson, A. R. (1973). Psychology and culture. *Annual Review of Psychology, 24*(1), 355-378.
- Trickett, E. J. (1996). A future for community psychology: The contexts of diversity and the diversity of contexts. *American Journal of Community Psychology, 24*(2), 209-234.
- Trickett, E. J. (2009). Community psychology: Individuals and interventions in community context. *Annual Review of Psychology, 60*, 395-419.
- Trickett, E. J. (2011). From “water boiling in a Peruvian town” to “letting them die”: Culture, community intervention, and the metabolic balance between patience and zeal. *American Journal of Community Psychology, 47*(1-2), 58-68.
- Triyoga, L. S. (2010). *Merapi dan orang Jawa: Persepsi dan kepercayaannya*. Jakarta: Gramedia Widiasarana Indonesia.
- Tuan, Y.-F. (1974). *Topophilia*. Englewood Cliffs, NJ: Prentice-Hall.
- Tuan, Y.-F. (1979). Space and place: Humanistic perspective. In S. Gale & G. Olsson (Eds.), *Philosophy in geography* (pp. 387-427). Dordrecht: D. Reidel Publishing Company.
- Tuan, Y.-F. (1980). Rootedness and sense of place. *Landscape, 24*, 3-8.
- Tuan, Y.-F. (1991). Language and the making of place: A narrative-descriptive approach. *Annals of the Association of American Geographers, 81*(4), 684-696.
- Tuason, M. T. G., Güss, C. D., & Carroll, L. (2012). The disaster continues: A qualitative study on the experiences of displaced Hurricane Katrina survivors. *Professional Psychology: Research and Practice, 43*(4), 288-297.
- Turner, R. H., Nigg, J. M., & Paz, D. H. (1986). *Waiting for disaster: Earthquake watch in California*. Berkeley: Univ of California Press.

- Turner, V. (1967). *The forest of symbols: Aspects of Ndembu ritual*. Ithaca, NY: Cornell University Press.
- Turner, V. (1975). Symbolic studies. *Annual Review of Anthropology*, 4, 145-161.
- Turner, V. (1977). Process, system, and symbol: A new anthropological synthesis. *Daedalus*, 106(3), 61-80.
- Turner, V. W. (1973). Symbols in African ritual. *Science*, 179(4078), 1100-1105.
- Twigger-Ross, C. L., & Uzzell, D. L. (1996). Place and identity processes. *Journal of Environmental Psychology*, 16(3), 205-220.
- Tylor, E. B. (1871). *Primitive culture: Researches into the development of mythology, philosophy, religion, art, and custom* (Vol. 1). London: John Murray.
- Uscher-Pines, L. (2009). Health effects of relocation following disaster: A systematic review of the literature. *Disasters*, 33(1), 1-22.
- Vaisey, S. (2007). Structure, culture, and community: The search for belonging in 50 urban communes. *American Sociological Review*, 72(6), 851-873.
- Vernberg, E. M., Steinberg, A. M., Jacobs, A. K., Brymer, M. J., Watson, P. J., Osofsky, J. D., . . . Ruzek, J. I. (2008). Innovations in disaster mental health: Psychological first aid. *Professional Psychology: Research and Practice*, 39(4), 381-388.
- Virden, R. J., & Walker, G. J. (1999). Ethnic/racial and gender variations among meanings given to, and preferences for, the natural environment. *Leisure Sciences*, 21(3), 219-239.
- Voight, B., Constantine, E. K., Siswoidjyo, S., & Torley, R. (2000). Historical eruptions of Merapi volcano, Central Java, Indonesia, 1768–1998. *Journal of Volcanology and Geothermal Research*, 100(1), 69-138.
- Waizenegger, A., & Hyndman, J. (2010). Two solitudes: Post-tsunami and post-conflict Aceh. *Disasters*, 34(3), 787-808.
- Wallace, A. F. C. (1956). *Tornado in Worcester: An exploratory study of individual and community behavior in an extreme situation*: National Academy of Sciences, National Research Council.
- Warsini, S., Mills, J., & Usher, K. (2014). Solastalgia: Living with the environmental damage caused by natural disasters. *Prehospital and Disaster Medicine*, 29(1), 87-90.

- Warsini, S., Mills, J., West, C., & Usher, K. (2016). Living through a volcanic eruption: Understanding the experience of survivors as a phenomenological existential phenomenon. *International Journal of Mental Health Nursing*, 25(3), 206-213.
- Watts, M. (1983). On the poverty of theory: Natural hazards research in context. In K. Hewitt (Ed.), *Interpretation of calamity: From the viewpoint of human ecology* (pp. 231-262). London: Allen & Unwin.
- WB. (2012). *REKOMPAK: Rebuilding Indonesia's communities after disasters*. Jakarta: World Bank.
- Weller, J. M., & Wenger, D. E. (1973). *Disaster subcultures: The cultural residues of community disasters*. Disaster Research Center, University of Delaware.
- Wellman, B. (1988). Structural analysis: From method and metaphor to theory and substance. In B. Wellman & S. D. Berkowitz (Eds.), *Social structures: A network approach* (pp. 19-61). New York: Cambridge University Press.
- White, L. A., & Greenberg, J. H. (1954). Reviewed works: The nature of culture by A. L. Kroeber; Culture: A critical review of concepts and definitions by A. L. Kroeber; Clyde Kluckhohn. *American Anthropologist*, 56(3), 461-471.
- Whiting, B. B. (1976). The problem of the packaged variable. In K. F. Riegel & J. A. Meacham (Eds.), *The developing individual in a changing world Vol. I Historical and cultural issues* (pp. 303-309). Chicago: Aldine.
- Williams, R. (1976). *Keywords: A vocabulary of culture and society*. New York: Oxford University Press.
- Willig, C. (2008). *Introducing qualitative research in psychology* (2nd ed.). New York: McGraw-Hill/Open University Press.
- Wilson, W. (2012). Constructive grounded theory in the search for meaning on global mindedness: A novice researcher's guide. *International Journal of Evidence Based Coaching and Mentoring*, 6, 1-14.
- Wind, T. R., Fordham, M., & Komproue, I. H. (2011). Social capital and post-disaster mental health. *Global Health Action*, 4(s2), 1-9.
- Wind, T. R., & Komproue, I. H. (2012). The mechanisms that associate community social capital with post-disaster mental health: A multilevel model. *Social Science & Medicine*, 75(9), 1715-1720.
- Winkworth, G. (2007). *Disaster recovery: A review of the literature*. Dickson ACT: Institute of Child Protection Studies.

- Wise, N. (2015). Placing sense of community. *Journal of Community Psychology*, 43(7), 920-929.
- Wolf, E. R. (1990). Distinguished lecture: Facing power - old insights, new questions. *American Anthropologist*, 92(3), 586-596.
- Wong, W. C. (2009). Retracing the footsteps of Wilhelm Wundt: Explorations in the disciplinary frontiers of psychology and in völkerpsychologie. *History of Psychology*, 12(4), 229-265.
- Wood, L., & Giles-Corti, B. (2008). Is there a place for social capital in the psychology of health and place? *Journal of Environmental Psychology*, 28(2), 154-163.
- Woodward, K. (2008). Hanging out and hanging about Insider/outsider research in the sport of boxing. *Ethnography*, 9(4), 536-560.
- Woolcock, M. (1998). Social capital and economic development: Toward a theoretical synthesis and policy framework. *Theory and Society*, 27(2), 151-208.
- Xu, Q., Perkins, D. D., & Chow, J. C.-C. (2010). Sense of community, neighboring, and social capital as predictors of local political participation in China. *American Journal of Community Psychology*, 45(3-4), 259-271.
- Yengoyan, A. A. (1986). Theory in anthropology: On the demise of the concept of culture. *Comparative Studies in Society and History*, 28(2), 368-374.
- Yonetani, M., & Morris, T. (2013). *Global estimates 2012: People displaced by disasters*. Geneva: IDMC.
- Zaumseil, M., & Prawitasari-Hadiyono, J. E. (2015). Living in a landscape of risk in Java/Indonesia. In I. C. Gil & C. Wulf (Eds.), *Hazardous future: Disaster, representation and the assessment of risk* (pp. 253-289). Berlin: De Gruyter.
- Zeccola, P. (2011). Dividing disasters in Aceh, Indonesia: Separatist conflict and tsunami, human rights and humanitarianism. *Disasters*, 35(2), 308-328.
- Zou, X., Tam, K.-P., Morris, M. W., Lee, S.-l., Lau, I. Y.-M., & Chiu, C.-y. (2009). Culture as common sense: Perceived consensus versus personal beliefs as mechanisms of cultural influence. *Journal of Personality and Social Psychology*, 97(4), 579-597.

Appendix 1: Ethics approval by Victoria University Human Research Ethics Committee

From: quest.noreply@vu.edu.au
Subject: Ethics Application Process Finalised - Application Approved
Date: September 13, 2013 at 12:07 PM
To: Meagan.Tyler@vu.edu.au, adrian.fisher@vu.edu.au
Cc: dickychresthover.pelupessy@live.vu.edu.au

Dear ASPR ADRIAN FISHER,

Your ethics application has been formally reviewed and finalised.

- » Application ID: HRE13-190
- » Investigators: ASPR ADRIAN FISHER (Primary CI); DR MEAGAN TYLER, MR Dicky Pelupessy
- » Application Title: The role of culture in the relationship between sense of community and community recovery for relocated communities post-natural disaster
- » Form Version: 12-10

The application has been accepted and deemed to meet the requirements of the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2007)' by the Victoria University Human Research Ethics Committee. Approval has been granted for two (2) years from the approval date; 13/09/2013.

Continued approval of this research project by the Victoria University Human Research Ethics Committee (VUHREC) is conditional upon the provision of a report within 12 months of the above approval date or upon the completion of the project (if earlier). A report proforma may be downloaded from the Office for Research website at: <http://research.vu.edu.au/hrec.php>.

Please note that the Human Research Ethics Committee must be informed of the following: any changes to the approved research protocol, project timelines, any serious events or adverse and/or unforeseen events that may affect continued ethical acceptability of the project. In these unlikely events, researchers must immediately cease all data collection until the Committee has approved the changes. Researchers are also reminded of the need to notify the approving HREC of changes to personnel in research projects via a request for a minor amendment. It should also be noted that it is the Chief Investigators' responsibility to ensure the research project is conducted in line with the recommendations outlined in the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2007).'

On behalf of the Committee, I wish you all the best for the conduct of the project.

Secretary, Human Research Ethics Committee
Phone: 9919 4781 or 9919 4461
Email: researchethics@vu.edu.au

This is an automated email from an unattended email address. Do not reply to this address.

Appendix 2: Information to participants involved in research

You are invited to participate

You are invited to participate in a research project entitled “*The role of culture in the relationship between sense of community and community recovery for relocated communities post-natural disaster*”.

This project is being conducted by Dicky Pelupessy as part of a PhD study at Victoria University under the supervision of Prof. Adrian Fisher and Dr. Meagan Tyler from College of Arts.

Project explanation

Communities that are relocated after a natural disaster deal with physical, psychological and social impacts and need to develop a new sense of community in a new community setting as part of recovery process. At the same time, culture also changes in the new place. This research will investigate the role of culture in the process of development of sense of community and how culture and sense of community help in community recovery for relocated communities post-natural disaster. This research will examine relocated communities following the 2010 eruption of Merapi volcano.

What will I be asked to do?

You will participate in this project as either a tape-recorded interviewee, or in a recorded focus group with about 8-12 other people. The interviews will last up to 60 minutes and focus groups up to 120 minutes. If necessary, we may ask you to take part in a follow-up interview to clarify our understanding of the information we have gathered.

What will I gain from participating?

There is no payment for taking part in the research. By participating you will help us better understand the experiences of people who are relocated after a natural disaster, and this may help others through better planning and services.

How will the information I give be used?

The information that you give will only be used for this project, as completion for a PhD thesis at Victoria University, and any research publications or conference presentations that may result.

What are the potential risks of participating in this project?

We do not anticipate any major negative impacts, however, for some people, there may be some upset when discussing their experiences of the eruption and its impacts.

How will this project be conducted?

This project will collect data through interviews and focus groups with community leaders and members, interviews with authorities and NGO workers or activist, and documentation of archives.

Who is conducting the study?

This project is conducted by:

Prof. Adrian Fisher (chief investigator) – Phone: +61 3 99195933; Email: adrian.fisher@vu.edu.au

Dr. Meagan Tyler (co-investigator) – Phone: +61 3 99192751; Email: meagan.tyler@vu.edu.au

Dicky Pelupessy (student investigator) – Phone: +61 3 99195459; Email: dickyhresthover.pelupessy@live.vu.edu.au.

Any queries about your participation in this project may be directed to the Chief Investigator listed above.

If you have any queries or complaints about the way you have been treated, you may contact the Ethics Secretary, Victoria University Human Research Ethics Committee, Office for Research, Victoria University, PO Box 14428, Melbourne, VIC, 8001, email researchethics@vu.edu.au or phone (03) 9919 4781 or 4461.

Appendix 3: Information to participants involved in research (Indonesian version)

Anda kami undang untuk berpartisipasi

Anda kami undang untuk berpartisipasi dalam penelitian yang berjudul “Peran budaya dalam hubungan antara perasaan kekomunitasan dan pemulihan komunitas bagi komunitas yang direlokasi pasca bencana alam”. Penelitian ini dilakukan oleh Dicky Pelupessy sebagai bagian dari studi doktoral (S3) di Victoria University dibawah bimbingan Prof. Adrian Fisher dan Dr. Meagan Tyler.

Tentang penelitian

Komunitas yang direlokasi pasca bencana alam menghadapi dampak fisik, psikologis, dan sosial dan perlu membangun perasaan kekomunitasan baru di lingkungannya yang baru sebagai bagian dari upaya pemulihan. Pada saat yang sama, perubahan budaya terjadi di tempat atau lingkungan yang baru. Penelitian ini akan meneliti peran budaya dalam proses perkembangan perasaan kekomunitasan dan bagaimana budaya dan perasaan kekomunitasan membantu pemulihan komunitas bagi komunitas yang direlokasi pasca bencana alam. Penelitian ini secara khusus meneliti komunitas yang direlokasi pasca erupsi Gunung Merapi tahun 2010.

Apa yang akan diminta dari Anda?

Anda akan berpartisipasi dalam wawancara atau *focus group* yang terdiri dari 8-12 orang peserta yang akan direkam. Wawancara akan berlangsung sampai dengan 60 menit, sedangkan *focus group* akan berlangsung sampai dengan 120 menit. Jika diperlukan, kami mungkin akan meminta kesediaan Anda untuk wawancara lanjutan untuk mendalami informasi yang telah dikumpulkan.

Apa yang akan Anda peroleh dari partisipasi dalam penelitian ini?

Tidak ada uang yang diberikan untuk berpartisipasi dalam penelitian ini. Dengan Anda berpartisipasi, Anda membantu kami untuk memahami dengan lebih baik pengalaman orang yang direlokasi pasca bencana alam, dan hasil dari penelitian ini dapat digunakan untuk membantu orang lain melalui perencanaan dan pelayanan yang lebih baik.

Bagaimana informasi yang Anda berikan akan digunakan?

Informasi yang Anda berikan hanya akan digunakan dalam penelitian ini untuk menyelesaikan disertasi (tugas akhir studi doktoral/S3) di Victoria University, dan publikasi penelitian atau presentasi konferensi sebagai hasil dari disertasi.

Apa risiko potensial dari partisipasi dalam penelitian ini?

Kami tidak mengharapkan adanya dampak negatif, namun bagi sebagian orang ada kemungkinan timbul perasaan tidak nyaman saat menceritakan atau mendiskusikan pengalaman-pengalaman yang terkait dengan erupsi dan dampaknya.

Bagaimana penelitian ini dilaksanakan?

Penelitian ini akan mengumpulkan data melalui wawancara dan focus group dengan anggota dan tokoh komunitas, wawancara dengan perwakilan pemerintah dan pekerja/aktivis lembaga swadaya masyarakat, dan dokumentasi arsip.

Siapa yang melaksanakan penelitian?

Penelitian ini dilaksanakan oleh:

Prof. Adrian Fisher (Pembimbing utama penelitian) – Tel. +61 3 99195933; Email. adrian.fisher@vu.edu.au

Dr. Meagan Tyler (Pembimbing penelitian) – Tel. +61 3 99192751; Email. meagan.tyler@vu.edu.au

Dicky Pelupessy (Peneliti) – Tel. +61 3 99195459; Email. dickychresthover.pelupessy@live.vu.edu.au.

Pertanyaan berkaitan dengan partisipasi Anda dalam penelitian ini dapat ditujukan kepada pembimbing utama penelitian seperti tersebut di atas.

Apabila Anda mempunyai pertanyaan atau keluhan yang berkaitan dengan perlakuan yang Anda terima silakan menghubungi: Ethics Secretary, Victoria University Human Research Ethics Committee, Office for Research, Victoria University, PO Box 14428, Melbourne, VIC, 8001; Email. researchethics@vu.edu.au; Tel. +61 3 99194781 / 4461.

Appendix 4: Consent form for participants

INFORMATION TO PARTICIPANTS:

We would like to invite you to be a part of a study entitled "*The role of culture in the relationship between sense of community and community recovery for relocated communities post-natural disaster*". This research will investigate the role of culture in the process of development of sense of community and how culture and sense of community help in community recovery for relocated communities post-natural disaster. This research will examine relocated communities following the 2010 eruption of Merapi volcano. This study is part of a PhD study at Victoria University Melbourne, Australia.

You will participate in this project as either a tape-recorded interviewee, or in a recorded focus group with about 8-12 other people. The interviews will last up to 60 minutes and focus groups up to 120 minutes. If necessary, we may ask you to take part in a follow-up interview to clarify our understanding of the information we have gathered.

We do not anticipate any major negative impacts, however, for some people, there may be some upset when discussing their experiences of the eruption and its impacts. If you feel this is too upsetting for you, you do not have to do the interview, you may stop the interview and take some time, or you may seek counselling from local services that we can refer you to.

CERTIFICATION BY SUBJECT

I, "[Click here & type participant's name]"
of "[Click here & type participant's suburb]"

certify that I am at least 18 years old* and that I am voluntarily giving my consent to participate in the study:

"The role of culture in the relationship between sense of community and community recovery for relocated communities post-natural disaster" being conducted at Victoria University by: Prof. Adrian Fisher, Dr Meagan Tyler and Mr Dicky Pelupessy.

I certify that the objectives of the study, together with any risks and safeguards associated with the procedures listed hereunder to be carried out in the research, have been fully explained to me by:

Mr. Dicky Pelupessy

and that I freely consent to participation involving the below mentioned procedures (cross out the one that does not apply):

- Audio-taped interview of up to 60 minutes
- Audio-taped focus group of up to 2 hours.

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw from this study at any time and that this withdrawal will not jeopardise me in any way.

I have been informed that the information I provide will be kept confidential.

Signed:

Date:

Any queries about your participation in this project may be directed to the researcher Prof. Adrian Fisher

Phone: +61 3 99195933

Email: adrian.fisher@vu.edu.au

If you have any queries or complaints about the way you have been treated, you may contact the Ethics Secretary, Victoria University Human Research Ethics Committee, Office for Research, Victoria University, PO Box 14428, Melbourne, VIC, 8001, email Researchethics@vu.edu.au or phone +61 3 9919 4781 or 4461.

Appendix 5: Consent form for participants (Indonesian version)

Informasi untuk partisipan:

Kami mengundang Anda untuk berpartisipasi dalam penelitian berjudul “Peran budaya dalam hubungan antara perasaan kekomunitasan dan pemulihan komunitas bagi komunitas yang direlokasi pasca bencana alam”.

Penelitian ini dilakukan untuk melihat peran budaya dalam proses perkembangan perasaan kekomunitasan dan bagaimana budaya dan perasaan kekomunitasan membantu pemulihan komunitas bagi komunitas yang direlokasi pasca bencana alam. Penelitian ini secara khusus melihat komunitas yang direlokasi pasca erupsi Gunung Merapi tahun 2010. Penelitian ini dilakukan sebagai bagian dari studi doktoral (S3) di Victoria University, Melbourne, Australia.

Anda akan berpartisipasi dalam wawancara atau *focus group* yang terdiri dari 8-12 orang peserta yang akan direkam. Wawancara akan berlangsung sampai dengan 60 menit, sedangkan *focus group* akan berlangsung sampai dengan 120 menit. Jika diperlukan, kami mungkin akan meminta kesediaan Anda untuk wawancara lanjutan untuk mendalami informasi yang telah dikumpulkan.

Kami tidak mengharapkan adanya dampak negatif, namun bagi sebagian orang ada kemungkinan timbul perasaan tidak nyaman saat menceritakan atau mendiskusikan pengalaman-pengalaman yang terkait dengan erupsi dan dampaknya. Apabila Anda merasa amat tidak nyaman, Anda tidak harus melakukan wawancara, Anda dapat menghentikan wawancara dan jeda sejenak, atau Anda dapat mencari layanan konseling dari lembaga yang bisa kami rujuk.

Persetujuan

Saya,

Asal dari

menyatakan telah berusia sekurang-kurangnya 18 tahun dan secara sukarela memberikan persetujuan untuk berpartisipasi dalam penelitian: “Peran budaya dalam hubungan antara perasaan kekomunitasan dan pemulihan komunitas bagi komunitas yang direlokasi pasca bencana alam”, yang dilakukan oleh Prof. Adrian Fisher, Dr. Meagan Tyler dan Sdr. Dicky Pelupessy.

Saya menyatakan bahwa tujuan penelitian dan risiko yang berkenaan dengan partisipasi dalam penelitian serta cara untuk mengatasinya telah dijelaskan kepada saya oleh Sdr. Dicky Pelupessy

dan saya secara sukarela menyetujui untuk berpartisipasi (*coret yang tidak sesuai*):

- Wawancara sampai dengan 60 menit yang direkam
- *Focus group* sampai dengan 2 jam yang direkam

Saya menyatakan bahwa saya telah diberi kesempatan untuk mengajukan pertanyaan dan mengerti bahwa saya dapat membatalkan partisipasi saya setiap saat dan tidak akan dirugikan akibat pembatalan yang saya lakukan

Saya telah diinformasikan bahwa informasi yang saya berikan akan dijaga kerahasiaannya.

Tandatangan:

Tanggal:

Pertanyaan berkaitan dengan partisipasi Anda dalam penelitian ini dapat ditujukan kepada

Prof. Adrian Fisher, Tel. +61 3 99195933, Email. adrian.fisher@vu.edu.au

Apabila Anda mempunyai pertanyaan atau keluhan yang berkaitan dengan perlakuan yang Anda terima silakan menghubungi: Ethics Secretary, Victoria University Human Research Ethics Committee, Office for Research, Victoria University, PO Box 14428, Melbourne, VIC, 8001; Email. researchethics@vu.edu.au; Tel. +61 3 99194781 / 4461.

Appendix 6: Interview guide (community interviewee)

(Questions presented show the nature of information being sought. When translated into Bahasa Indonesia and Javanese they will be re-phrased to provide culturally appropriate wording.)

| Question | Follow up questions | |
|---|---|--|
| 1. What do you do – (job/role)? | | |
| 2. Where do you live now? | | |
| 3. Where did you live before the 2010 eruption? | | |
| 4. What were you doing when Merapi erupted in 2010? | What actions did you take? Where did you evacuate? Where did you live before being relocated? How long did you live there before being relocated? | |
| 5. Did you experience any other eruption before the 2010 eruption? | Did you and your family evacuate or relocate? How did you continue life after the eruption(s) before the 2010 eruption? | |
| 6. What did you do before the 2010 eruption? | How did you and your family go about life before the 2010 eruption? | |
| 7. How did your community go about life before the 2010 eruption? | What was the main subsistence activity of your community? What did men do? What did women do? What did and do the communities believe about Merapi? About life in the Merapi area? | |
| 8. Do all of the people in the new village come from the same village before the 2010 eruption? | How do people sustain sense of community in the new village? Does the community maintain any past practices in the new village? What are they? Why? | |
| 9. What changed in the community as a | Why? How do you feel about | |

| | | |
|--|---|--|
| result of the eruption? | what changed? | |
| 10. What remained the same despite of the eruption? | Why? | |
| 11. What were the challenges for communities dealing with the eruption and relocation? | What problems did people encounter? Obstacles? Interference? Limits on resources? | |
| 12. What were the positive manifestations shown by communities in dealing with the eruption and relocation? | What can be the factors of the positive manifestations? Do you think the response of the community to the relocation reveals the community's system of meanings and beliefs? If yes, in what ways? | |
| 13. What assistance did your community get from agencies and NGOs after the eruption? | How soon? How appropriate? | |
| 14. Did the community benefit from the assistance? | How? Why? What else could have been provided? | |
| 15. To what extent has the community recovered? | Why? | |
| 16. What is the role of community leaders/religious leaders/women/youth (choose one) in the recovery of the community? | | |
| 17. Is there anything else I should know to understand this community better? | | |

Appendix 7: Interview guide (government interviewee)

(Questions presented show the nature of information being sought. When translated into Bahasa Indonesia and Javanese they will be re-phrased to provide culturally appropriate wording.)

| Question | Follow up questions | |
|---|--|---|
| 1. Where do you work? What is your position and role? | How long have you been in this position and role? | |
| 2. How were you involved in the 2010 emergency and/or post-emergency responses? | What was your role? What did you do? Where? When? | <i>If not involved then, what role, when and observations since taking up role.</i> |
| 3. What were the effects of the assistance? - During the emergency phase (3 months after the eruption as declared by the central government) - During the period of temporary relocation - During the period of permanent relocation What type of assistance? | What was the response of the community to the assistance? How did the response change over time? | |
| 4. To what extent did the community benefit from the assistance? | How? Why? | |
| 5. How did people act collectively? How did people start a collective response? - During the emergency phase (3 months after the eruption as declared by the central government) - Post-emergency phase | When? Who led efforts? Why these people? How did people make decisions about what to do? Over what period of time? | |
| 6. What changed in the community as a result of the eruption? - Physically - Psychologically - Socially | Why? | |
| 7. What remained the same despite of the eruption? | Why? | |
| 8. What do you think that the | Why? | |

| | | |
|---|---|--|
| response of the community to the eruption reveals the culture of the community? | | |
| 9. What were the challenges for communities dealing with the eruption and relocation? | What problems did people encounter? Obstacles? Interference? Limits on resources? | |
| 10. What were the positive manifestations shown by communities in dealing with the eruption and relocation? | What can be the factors of the achievements? Do you think the response of the community to the relocation reveals the community's system of meanings and beliefs? If yes, in what ways? | |
| 11. To what extent has the community recovered? | Why? | |
| 12. What are issues or problems that still continue to exist in the relocated communities? | Why? | |
| 13. How prepared was your agency for the emergency response in the 2010 eruption? | What were the constraints or obstacles? | |
| 14. How prepared was the government (national and local) and its mechanism of disaster management for the emergency response in the 2010 eruption? | What were the constraints or obstacles? | |
| 15. To what extent did tension or overlap between agencies (NGOs – local/national and international – and government) occur during emergency and/or post-emergency responses? | | |

Appendix 8: Interview guide (Non-Governmental Organization interviewee)

(Questions presented show the nature of information being sought. When translated into Bahasa Indonesia and Javanese they will be re-phrased to provide culturally appropriate wording.)

| Question | Follow up questions | |
|---|---|--|
| 1. Where do you work? What is your position and role? | How long have you been in this position and role? | |
| 2. Did you work with the communities you assisted prior the 2010 eruption? | If yes, What? Where? When? | |
| 3. How were you involved in the 2010 emergency and/or post-emergency responses? | What was your role? What did you do? Where? When? | |
| 4. What were the effects of the assistance? - During the emergency phase (3 months after the eruption as declared by the central government) - During the period of temporary relocation - During the period of permanent relocation What type of assistance? | What was the response of the community to the assistance? How did the response change over time? | |
| 5. To what extent did the community benefit from the assistance? | How? Why? | |
| 6. How did people act collectively? How did people start a collective response? - During the emergency phase (3 months after the eruption as declared by the central government) - Post-emergency phase | When? Who led efforts? Why these people? How did people make decisions about what to do? Over what period of time? | |
| 7. What changed in the community as a result of the eruption? - Physically | Why? | |

| | | |
|---|--|--|
| - Psychologically - Socially | | |
| 8. What remained the same despite of the eruption? | Why? | |
| 9. What do you think that the response of the community to the eruption reveals about the culture of the community? | Why? | |
| 10. What were the challenges for communities dealing with the eruption and relocation? | What problems did people encounter? Obstacles? Interference? Limits on resources? | |
| 11. What were the positive manifestations shown by communities in dealing with the eruption and relocation? | What can be the factors of the achievements? Do you think the response of the community to the relocation reveals community's system of meanings and beliefs? If yes, in what ways? | |
| 12. To what extent has the community recovered? | Why? | |
| 13. What are issues or problems that still continue to exist in the relocated communities? | Why? | |
| 14. How prepared was your NGO for the emergency response in the 2010 eruption? | What were the constraints or obstacles? How about the NGO community in general? | |
| 15. How prepared was the government (national and local) and its mechanism of disaster management for the emergency response in the 2010 eruption? | What were the constraints or obstacles? | |
| 16. To what extent did the tension or overlap between agencies (NGOs –local/ national and international – and government) occur during emergency and/or post-emergency responses? | | |