

University of Massachusetts Boston

From the Selected Works of Gonzalo Bacigalupe, EdD, MPH

Spring February 18, 2019

Disasters are never natural: Emerging media to map lives and territories at risk

Gonzalo Bacigalupe



Available at: https://works.bepress.com/gonzalo_bacigalupe/34/

Chapter 3

Disasters Are Never Natural: Emerging Media to Map Lives and Territories at Risk



Gonzalo Bacigalupe

Situating the Author

My grandparents' house always had letters with stamps that told us about our relatives. As the grandchild of the Spanish diaspora in Latin America, I collected stamps and little did I know that I was collecting the memories of those exchanges across the hemispheres. That was the technology that connected us across geographical distance. Telephones were scarce, telegrams were expensive, and travel was slow and inaccessible for those in the working class. What would have been the life of my grandparents if they had access to cheap and effective communications technology like Skype or WhatsApp? Emerging technologies enable immigrants across the globe and those separated by long commute distances in large urban enclaves to communicate effortlessly only very recently. Would this media have prevented my grandmother from losing contact—letters decreased through the years—with her relatives and addressing the longing for the family connection as she was becoming blind? Family history does inform my interest on the way technology may enable, maintain, intensify, and shape relationships in families as well as clinical work (Bacigalupe & Askari, 2013; Bacigalupe & Cámara, 2012; Bacigalupe & Lambe, 2011). A focus that continued to expand as I began fieldwork research in Chile to study how communities utilize emerging media to confront crisis elicited by extreme natural events—earthquakes, tsunamis, fires, landslides, floods, droughts, etc.

G. Bacigalupe (✉)

Department of Counseling and School Psychology, College of Education,
University of Massachusetts Boston, Boston, MA, USA

National Research Center for Integrated Natural Disaster Management (CIGIDEN),
CONICYT/FONDAP/15110017, Santiago, Chile

© Springer Nature Switzerland AG 2019

L. L. Charlés, G. Samarasinghe (eds.), *Family Systems and Global Humanitarian Mental Health*, https://doi.org/10.1007/978-3-030-03216-6_3

23

After the 2010 earthquakes in Chile and Haiti, I began exploring the power of social networks for helping individuals and communities to deal with the emergency and the initial recovery phases immediately after even if geographical distance is present (Bacigalupe & Velasco-Martin, 2018). Through the use of social networks and crowdsourcing of data, volunteers were able to locate relatives and friends, learn about needs, find ways of volunteering more effectively on the ground, and prevent as much as possible the negative impact humanitarian deployment in the site of the catastrophes that were unfolding in both countries. Studying the power of volunteers that use social media to inform, calm, and direct resources, and overall foster resilience in times of crisis, was instructive in expanding the notion of a strength-focused approach that informs my clinical work (Bacigalupe, 1996; Lawless, Gale, & Bacigalupe, 2001). This clinical approach is coherent with framing the work with others as a conversation, as a retelling of stories, and as a discursive exercise where what we talk constitutes reality and not just represents it in the search for the “truth” (Bacigalupe, 1998a, 1998b). Therapeutic conversations that question expert knowledge are consistent with participatory forms of engaging in the world (Bacigalupe, 2009). Technology can extend and intensify those conversations across distance and in difficult circumstances. The ability to archive and participate asynchronously also adds new forms of participation that bring forth all sort of new capabilities to families and communities. Communication information technologies were not necessarily designed for these purposes but fill the need for connecting as well as to overcome social norms that regulate face-to-face relationships that may inhibit experts meeting non-experts, the older sharing with the younger in nonhierarchical ways, as well as enabling the breakdown of other rigid cultural and social boundaries. The affordances of technology (Bucher & Helmond, 2017) can also amplify and intensify the deleterious impact of inequality when communities do not appropriate them. Moreover, emerging media—as the more traditional media—exists within a neoliberal logic in which surveillance of individuals to expand and test its capabilities is a central feature. Paradoxically, the behavior of those at the margin may not be of such interest to business although could be the focus of government control agencies. Our communications could be encrypted, but communities utilizing them to organize and find ways of gaining agency could also become the target of surveillance. In my work, however, emerging media affordances inspire and intensify forms of community participation that were before reserved to the most privileged. In the same way that immigrants have become de facto transnational as they maintain continuous communication with their families and communities abroad (Bacigalupe & Cámara, 2012), the ability of local communities to adopt emerging media to learn, advocate, and gain agency could be transforming of the ways experts define marginality particularly in the context of disasters and climate change adaptation. The local adoption of emerging media and the introduction of sophisticated technologies that emphasize participation from those at the bottom remind us that “small changes from below” (de Mel, 2017) can spread and extend through communities in shared and distant territories.

Lives at Unequal Risk

Vulnerable individuals, families, and communities often live in territories already characterized by the lack of security, marginality, and lack access to basic goods for survival. Extreme natural events put them at extreme risk. Disasters, therefore, are never natural (Gaillard & Mercer, 2013; Ismail-Zadeh, Cutter, Takeuchi, & Paton, 2017; Wisner, Gaillard, & Kelman, 2012). Disasters deepen and sustain social inequality (Gould, Garcia, & Remes, 2016). It is in these communities in which a disaster risk reduction strategy cannot alone or at the center be about intervening after a disaster occurs. Education, preparedness, and mitigation become central in preventing the occurrence of a disaster or catastrophe that threatens the lives of those populating these territories. Even dialogical and collaborative post-disaster humanitarian interventions may maintain the unequal conditions that make a natural event to become a destructive crisis. For clinicians, educators, building professionals, and all other experts, in supporting the recovery or addressing the immediate emergency, it is pivotal to educate in the messy and complex process of supporting a resilient approach founded on social justice and not just repair and rebuild approach. We need to prepare for creating just environments rather than attempt repairing the people and their habitat delinked from what eliminates social vulnerability and the overall identity of lives at risk.

Despite the unequal impact of disasters, dominant approaches are informed by a militaristic and bureaucratic approach to intervene (Coyne, 2013). The restoration of order seems to prevail after extreme natural event strikes. A hierarchical approach to the emergency after the impact of an event, palliative interventions with individuals, and the development of highly technological- and expert-driven solutions drive post-disaster action. The interventions by experts, professionals, and public and private institutions—government and nongovernmental—are often focused on the emergency or the palliation of the crisis rather than in strengthening the ability of people to develop a disaster risk strategy based on their needs, in sustaining resilience (Atallah, Contreras Painemal, Albornoz, Salgado, & Pilquil Lizama, 2018). Similarly, the exchange between experts and these communities is often fraught with a lack of understanding of how risk is construed in these territories. Emerging media—social networks, co-design thinking, aerial robotics, and digital cameras—offer innovative ways of engaging in the assessment of risk and points of resilience.

Conversations about risk and resilience are not common among communities living at risk. Emerging media offers ways of engaging anew with their territory. To create these conversations and interventions, it is crucial to develop a transdisciplinary approach that includes architects, sociologists, psychologists, social workers, etc. This approach intends to focus on the problem as lived and its potential solutions without centering it on a disciplinary question. It intends to address systematically the question of resilience in the context of disaster in a dialogue with individuals and families living as a norm in territories at risk (Atallah, Bacigalupe, & Repetto, *in press*). Transdisciplinary work requires thinking about how the

distinctions each of us makes can become the source of a problem and/or a solution. This is similar to the way discursive and narrative therapies have insisted on the role that our professional roles have on defining and redefining reality as we make distinctions of what matters and what doesn't (Combs & Freedman, 2012; Tomm, George, Wulff, & Strong, 2014) and thus on making clear how our interventions are never free from validating or challenging inequity. Mapping risk and resilience interrogates not only what needs to change in these territories and communities but also how we, professionals, need to rethink our subject of intervention.

Emerging Media: Engaging in Conversations

Emerging media is per se attractive; children, adolescents, and adults are drawn to objects that call for a different representation of their relationships and the place they live in. Emerging media may also represent and construct information in ways that may have not been accessible before; in the hands of communities, these technologies can suggest new ways of engaging with knowledge and power. A strong temptation is to put the technology at the center rather than the possibilities that may evoke for a truly dialogical, inspirational, and participatory engagement. Engaging with emerging media can have the capacity to question and deconstruct the often naturalized ways of defining problems and creating solutions. It is not the technology per se, but the proposed interventions are also not devoid of the power of emerging technologies having to offer either. Technological interventions can be top-down and cutting edge, but they can also sustain bottom-up action. We can utilize technology to inspire action, to seduce into participation, to advocate for change, to empower communities to engage with those having the power to reassign resources, and to rethink how we engage with others.

Media can determine how communities construct their territory. The utilization of novel media cannot only offer a new perspective but also bring new voices into the conversation, thus reconstructing the territory anew. A map generated with the information that a drone collects can inspire a different cartography of the territory that people inhabit (Bacigalupe & Ojeda, 2018). This experience is not only a perceptual cognitive experiment but also a collective and dialogical one, which can undermine the hierarchical and often paternalistic approach of experts engaging with the most vulnerable. The ability to modify the way we perceive a territory, the place we live in and/or work, can be substantive in shaping our actions on the same place. When a family or a community mobilizes their scarce resources to build a house in what becomes an informal settlement, they are making implicit and explicit assessments of risk (Ojeda, Bacigalupe, & Pino, 2018). Evaluating risk for these families may not have the characteristics of a professional or expert assessment but can be accurate and informative. This is in part because these families live in conditions of risk that are intrinsically linked to their transgenerational identity; their memories and lived experiences are intimately connected to the place they live in. Informal settlements do not only emerge as part of social movements or organizations

but also as intergenerational and extended family strategies to obtaining a house to live. Living at risk is the normal. Indeed, informal settlements (tomas), in countries like Chile, often referred as poblaciones (shanty towns), can last for generations. Informal settlements may never be integrated fully into the formal functioning of a city. They may not have access to water or electricity, or the roads may never be paved or have access to public services like schools or health clinics. When an extreme natural event occurs, that informality becomes visible to everyone. If the house burns, how does the family demonstrate that this is their place or how do they support their claims for assistance if they don't have any legal document that testify to the characteristics of the house? Assisting families and communities, in that context, does often lead to the deepening of these families' vulnerability since the fire does not only destroy their house and their belongings but also the claim to a piece of land. It is as if they are to start again with the search of another place.

Disasters are not natural; they occur as communities occupy spaces that are predictably dangerous and exposed to natural and anthropogenic hazards. Societies can invest resources to mitigate and prepare for these extreme events and organize their territories and where people live in ways that place those with the least resources at the most risk. Safe infrastructures, fast response during an emergency, resources for reconstruction, and the ability to create safe spaces are unequally distributed within cities, regions, countries, and the world. Some of the most vulnerable communities live in places that face multiple hazards with few resources to challenge rare but devastating events like fires, landslides, and earthquakes. It is in these territories where collaborative systemic interventions that integrate as many voices as possible are necessary. It is in these places where mental health interventions cannot be isolated from urban planning or the strengthening of community resilience.

Mapping Risk and Points of Resilience with Communities

Territories are the subjects of interpretation—a notion not foreign to practitioners, ethnographers, and other researchers who embrace a constructionist stance. The map is not the territory (Bateson, 1972, 1979) highlighting the role that context has in determining meaning, all essential assumptions informing postmodern systemic therapies (Freedman & Combs, 1996; McNamee & Gergen, 1992). These ideas, however, may encompass not only conceptually but literally a renewed meaning in the work with people at risk of suffering as a result of a disaster or a catastrophe. Radical geography does suggest that the map we construe of our territory is the result of contentious sociopolitical and cultural struggles. The map reflects society although its creation is today left to some expert technicians or scientists who often deliver on the views that represent the most privileged. The map is a discursive product in which those living at peril have little input as is the norm for the most vulnerable leaving in territories at risk; there, people are “uncounted, unrecognized, unseen” (Tironi & Rodríguez-Giralt, 2017, p. 90). Engaging everyone in a critical assessment of the map may be empowering and helpful in engaging with those in

the expert role. Participatory mapping has been, indeed, a critical research tool for communities to understand and construct their territories in ways that capture their aspirations, frustrations, and needs.

Maps today are available in multiple forms. Satellite images are accessible via digital maps—i.e., Google Earth. Growing is the availability of images produced locally with drones. Participatory mapping—also called community-based mapping—is a general term used to define a set of approaches and techniques that combine the tools of modern cartography with participatory methods to represent the spatial knowledge of local communities (Cochrane, Corbett, & Keller, 2014; Warner, 2015). The basic premise is that local inhabitants possess expert knowledge of their local territories (Wall, 2018), which can be expressed in a geographical model, easily understandable and universally recognized. Participatory maps often represent a socially or culturally distinct understanding of the landscape and include information that is excluded from mainstream or official maps. Maps created by local communities represent the place in which they live, showing those elements that communities themselves perceive as important such as customary land boundaries, traditional natural resource management practices, sacred areas, and so on.¹ Creating maps with the community is interactive and has been developed in order to integrate the traditional knowledge and ideas of the people living within a community into the planning and development of a project. Community mapping enables a local community to analyze risky areas through multiple forms of representation that facilitate the understanding of the socio-environmental conditions of the community. Participants are invited to draw a physical map of their community and encouraged to share their observations and rationale with the members of the research team. Maps can be simple or very sophisticated. They can be basic drawings or sophisticated constructions created with geographical information software. Researchers working with a community encourage heterogeneity in the maps that emerge from interviews, conversations, and ethnographic notes while walking in the neighborhood, etc. To engage with public officials, these maps are to be transformed into the usual cartographic conventions that may help the community to communicate. The maps, although a representation, also constitute an experience that creates identity. The experience may, therefore, redefine the identity of a community. Moreover, in informal settlements, often the ones at the most risk for extreme natural events and high levels of social vulnerability, the territory is changing as people settle and create spaces for constructing their houses as well as common spaces, roads, etc.

Conversations in the Territory

With an interdisciplinary team and researchers at universities associated with the Research Center for Integrated Disaster Risk Management in Chile (CIGIDEN), we have engaged with communities in territories at multiple risks. The community

¹ https://www.mappingforrights.org/participatory_mapping

DroneLab, as we have identified the team, initiates conversations with the leaders of these communities to offer a series of citizen science-based activities (Ceccaroni & Piera, 2017; Jollymore, Haines, Satterfield, & Johnson, 2017; Marchezini et al., 2017; Paul et al., 2018) always carefully assessing with the leaders how our intervention will enhance, deepen, and/or expand the community organization work. Thus, the interventions are tailored to community needs rather than centering on the specific research interests that our team members or the institutions we belong may have. Our ways of engagement is negotiated and the researchers are there not just to observe, although we do take notes, and prepare ethnographic notes, survey, etc. However, neighbors may have very different ideas about what they see as a preferred outcome. Some communities may need a community place to meet or install a library for the children. Others may desire to have the tools to advocate for trash removal or better water distribution on the part of the municipality. The mapping, therefore, can take on different meanings for the people in the territory, while also the researchers are creating research questions that could mobilize a different assessment of disaster risk on the part of the same community.

We have offered to run workshops for youngsters to learn how to fly a drone and activities to which people of all ages and families join. More sophisticated offerings have included the building of a 3D model of a neighborhood with discussions informed by videos produced with drones in situ. As some of these citizen-based actions have gained some popularity, other communities have found out about us and requested us to create community events in which learning about their community was the centerpiece. We have joined organized communities, supported by an NGO or a group of organized volunteers who were building a pedestrian paved road or plan for rebuilding new housing to replace those that were destroyed by a fire.

We offer the possibility of expanding their efforts at knowing the characteristics of their community through aerial mapping in which the technical expertise joins the local knowledge in an assessment of risks and resilience. Researchers and leaders of the community generate information that it is made available to the community through aerial photographs, videos, and 3D models that can be used for a more systemic understanding of disaster risk. The gathering of the data through actual drone flights and then the sharing of the data encourage discussions that assess their knowledge of risk in what has been named as countermapping (Dalton & Stallmann, 2018; Wall, 2018). This critical mapping results in analog 3D models to enable NGOs, public agencies, and those living in that territory to have a comprehensive knowledge of disaster risk.

A drone and a satellite, the detailed tridimensional map that can create, cannot capture the stories of a community. Collecting those stories, however, demands a particular kind of engagement that a drone flight may support. Experiencing the drone flying over their community can foster conversations adding to a map that becomes attached to stories and a shared history of the territory. We have found, for instance, that conversations around a map of the place lead to a qualitatively different assessment of points of resilience and risk. Agreeing, disagreeing, and building up a story that it is consensual while also recognizing that the stories can be contested is an exercise that highlights how a territory cannot simply be represented in map; the territory is a complex story under continuous construction.

Our team has developed a flexible protocol to engage with communities. We ask many questions; we are inquisitive about the potential outcomes of learning about their territory from above. It is an opportunity to assess carefully who may be missing and who may need to be a participant. Having this preliminary knowledge highlights the importance of creating knowledge that does not alienate parts of the community or that it does not include crucial voices. After we have reached support for a wide group, we plan on having an activity that consists of first getting them to know whom we are and becoming familiarized with the technology. We set up a tent and invite children, adolescents, and whole families to play with toy drones. This is, at the core and for the most part, a ludic activity to encourage informal conversations and trust. We also have a semiprofessional and a professional drone available for participants to experience the flights using a virtual reality lens. A professional drone pilot flies the drone, while community members put the virtual reality lenses and experience “flying over” their community. In parallel, data is collected. The “flying over” alone elicits rich conversations about risk, vulnerability, and points of resilience. At one of these community experiences, one of the neighborhood leaders who have lived for 20 years in the upper section of a hill was surprised of the existence of a forest at the bottom of a creek—a hazard that otherwise would be forgotten in a territory where fires are common. In the community where that neighborhood leader lives, the presence of eucalyptus is of significant risk since the non-native trees are particularly dangerous during a fire. This new awareness brings to the conversation a new way of thinking about risks and vulnerability and of how the natural of a disaster is not its connection with how nature behaves but of how these terms become naturalized despite being contested and socially constructed.

Once data is collected, it is possible to create detailed maps and models. With the help of architects and urban specialists, we have created models and detailed maps that represent an area. The model and maps are then utilized as the springboard for discussions about the situation in the present and the past. The map is intervened with additions by inhabitants who add demographic data, stories, important milestones, etc. The conversations do also address the question of what will happen if government offices and business decisions lead to the destruction of the community—the building of a large road that could destroy the sense of community that a largely pedestrian but dirty road now fosters. It also therefore leads to brainstorming about desired futures responding to the question of what will make this community much more resilient and prepared to withstand the impact of a natural or anthropocentric hazard.

Territories, like Minds, Are Relational

Communities, like families, have complex and rich stories to tell (Breckenridge & James, 2012; Imber-Black, Roberts, & Whiting, 2003). The less privileged these communities and families are, the larger the chance of lives being overly determined by the action of the state and the forces that sustain inequality and for disasters to

intensify these trends (Gunewardena & Schuller, 2008; Loewenstein, 2015). The tools employed to naturalize this reality are often the ones that professional and experts construe as the objective and the evidence-based or the ones carrying a cost-benefit analysis that legitimizes an understanding of disasters as natural or as unpredictable (Knowles, 2011; Marsh, 2018; Steinberg, 2006; K. Tierney, 2018; Tironi Rodó, Rodriguez-Giralt, & Guggenheim, 2014). I propose in this brief writing that some technological tools can draw the attention of these communities and enhance their agency to engage in more effective ways with those that have the power to shape their territory as well as help the same communities to create a discourse about risk and resilience that is in tune with their needs and desires for a better and just life.

When our team of researchers leaves the territory where the meetings with the community occur, we are always intrigued by how conversations evolve in the privacy of their networks and the families we engage with. We have been surprised by how organized communities integrate the models and maps we create into the fabric of their organizations. A model may be intervened to have additional information on it as added by community members, or a WhatsApp closed network conversation about the work we did is the source of conversations about what to do next. The community DroneLab activities have generative outcomes that are often invisible to experts.

My stamp collection had a thick set of pages with the stamps that my grandmother gave me and still constitutes a rich set of memories about my own identity. The stamps told the story, in not so subtle terms, of the hopeful and tragic diaspora that marks my family. The stamps, in addition to posed black and white photos, create a story that captures pieces of the family history, not the history but a snapshot that will continue to be modified. The technology of the time, with its power and constraints, enabled not only a representation of the time but a particular way of bringing the world to us. Technology is not neutral, nor on its own determines a specific path or way of understanding. The maps and models we create with the communities and the conversations that ensue may have a similar quality—a rich set of stories about resilience, risk, territories, and the interventions by the communities that inhabit them.

References

- Atallah, D., Bacigalupe, G., & Repetto, P. (in press). Centering at the margins: Critical community resilience praxis for global mental health equity research. *Journal of Humanistic Psychology*.
- Atallah, D. G., Contreras Painemal, C., Albornoz, L., Salgado, F., & Pilquil Lizama, E. (2018). Engaging critical community resilience praxis: A qualitative study with Mapuche communities in Chile facing structural racism and disasters. *Journal of Community Psychology*, 46(5), 575–597.
- Bacigalupe, G. (1996). Writing in therapy: A participatory approach. *Journal of Family Therapy*, 18(4), 361–375.
- Bacigalupe, G. (1998a). Cross-cultural systemic therapy training and consultation: A postcolonial view. *Journal of Systemic Therapies*, 17(1), 31–44.

- Bacigalupe, G. (Ed.). (1998b). *Consulting and training in the land of others: Special issue, Journal of Systemic Therapies* (Vol. 17). New York, NY: Guilford Press.
- Bacigalupe, G. (2009). Mapping transparent consultations with health and protective services teams. *Journal of Systemic Therapies*, 28(3), 77–88.
- Bacigalupe, G., & Askari, S. (2013). E-health innovations, collaboration, and healthcare disparities: Developing criteria for culturally competent evaluation. *Family, Systems, & Health*, 31(3), 248–263. <https://doi.org/10.1037/a0033386>
- Bacigalupe, G., & Cámara, M. (2012). Transnational families and social technologies: Reassessing immigration psychology. *Journal of Ethnic and Migration Studies*, 38(9), 1425–1438.
- Bacigalupe, G., & Lambe, S. (2011). Virtualizing intimacy: Information communication technologies and transnational families in therapy. *Family Process*, 50(1), 12–26. <https://doi.org/10.1111/j.1545-5300.2010.01343.x>
- Bacigalupe, G., & Ojeda, L. (2018, May–June). Tecnologías emergentes para la participación comunitaria en la reducción del riesgo de desastres: El DronLab, Una iniciativa de CIGIDEN-CINVIT-ADRA. [Emerging technologies for community participation in disaster risk reduction] COTA: Ciudad, Observación, Territorio, Arte.
- Bacigalupe, G., & Velasco-Martin, J. (2018). *Are crisis platforms supporting citizen participation?* Paper presented at the International Workshop on Complex Networks.
- Bateson, G. (1972). *Steps to an ecology of mind*. Northvale, NJ: Jason Aronson Inc.
- Bateson, G. (1979). *Mind and nature. A necessary unity*. London: Wildwood House Ltd..
- Breckenridge, J., & James, K. (2012). Therapeutic responses to communities affected by disasters: The contribution of family therapy. *Australian and New Zealand Journal of Family Therapy*, 33(03), 242–256. <https://doi.org/10.1017/aft.2012.29>
- Bucher, T., & Helmond, A. (2017). The affordances of social media platforms. In J. Burgess, A. Marwick, & T. Poell (Eds.), *The SAGE handbook of social media* (pp. 223–253). London/Thousand Oaks, CA: SAGE Publications.
- Ceccaroni, L., & Piera, J. (2017). *Analyzing the role of citizen science in modern research*. Hershey, PA: Information Science Reference.
- Cochrane, L., Corbett, J., & Keller, P. (2014). *Impact of community-based and participatory mapping*. Institute for Studies and Innovation in Community-University Engagement. University of Victoria.
- Combs, G., & Freedman, J. (2012). Narrative, poststructuralism, and social justice: Current practices in narrative therapy. *The Counseling Psychologist*, 40(7), 1033–1060.
- Coyne, C. J. (2013). *Doing bad by doing good: Why humanitarian action fails*. Stanford, CA: Stanford University Press.
- Dalton, C. M., & Stallmann, T. (2018). Counter-mapping data science. *The Canadian Geographer/Le Géographe canadien*, 62(1), 93–101.
- de Mel, N. (2017). A grammar of emergence: Culture and the state in the post-tsunami resettlement of Burgher women of Batticaloa, Sri Lanka. *Critical Asian Studies*, 49(1), 73–91.
- Freedman, J., & Combs, G. (1996). *Narrative therapy: The social construction of preferred realities*. New York, NY: W. W. Norton.
- Gaillard, J.-C., & Mercer, J. (2013). From knowledge to action: Bridging gaps in disaster risk reduction. *Progress in Human Geography*, 37(1), 93–114.
- Gould, K. A., Garcia, M. M., & Remes, J. A. (2016). Beyond “natural-disasters-are-not-natural”: The work of state and nature after the 2010 earthquake in Chile. *Journal of Political Ecology*, 23(1), 93–114.
- Gunewardena, N., & Schuller, M. (2008). *Capitalizing on catastrophe: Neoliberal strategies in disaster reconstruction*. Lanham, MD: AltaMira Press.
- Imber-Black, E., Roberts, J., & Whiting, R. A. (Eds.). (2003). *Rituals in families and family therapy*. New York: WW Norton & Company.
- Ismail-Zadeh, A. T., Cutter, S. L., Takeuchi, K., & Paton, D. (2017). Forging a paradigm shift in disaster science. *Natural Hazards*, 86(2), 969–988.

- Jollymore, A., Haines, M. J., Satterfield, T., & Johnson, M. S. (2017). Citizen science for water quality monitoring: Data implications of citizen perspectives. *Journal of Environmental Management*, 200, 456–467.
- Knowles, S. G. (2011). *The disaster experts: Mastering risk in modern America* (1st ed.). Philadelphia, PA: University of Pennsylvania Press.
- Lawless, J. J., Gale, J., & Bacigalupe, G. (2001). The discourse of culture and race in family therapy supervision: A conversational analysis. *Contemporary Family Therapy*, 23(2), 181–197.
- Loewenstein, A. (2015). *Disaster capitalism: Making a killing out of catastrophe*. London/New York: Verso Books.
- Marchezini, V., Trajber, R., Olivato, D., Munoz, V. A., de Oliveira Pereira, F., & Luz, A. E. O. (2017). Participatory early warning systems: Youth, citizen science, and intergenerational dialogues on disaster risk reduction in Brazil. *International Journal of Disaster Risk Science*, 8(4), 390–401.
- Marsh, G. (2018). *Community engagement in post-disaster recovery*. London/New York, NY: Routledge, Taylor & Francis Group.
- McNamee, S., & Gergen, K. J. (Eds.). (1992). *Therapy as social construction*. Newbury Park, CA: Sage Publications.
- Ojeda, L., Bacigalupe, G., & Pino, A. (2018). Coproduction after a disaster: The reconstruction of an informal settlement in Chile. *Environment and Urbanization*, 30(2), 1–20. <https://doi.org/10.1177/0956247818790731>
- Paul, J. D., Buytaert, W., Allen, S., Ballesteros-Cánovas, J. A., Bhusal, J., Cieslik, K., ... Stoffel, M. (2018). Citizen science for hydrological risk reduction and resilience building. *Wiley Interdisciplinary Reviews: Water*, 5(1), e1262.
- Steinberg, T. (2006). *Acts of god: The unnatural history of natural disaster in America*. New York, NY: Oxford University Press.
- Tierney, K. (2018). Disaster as social problem and social construct. In J. Trevino (Ed.), *The Cambridge handbook of social problems* (Vol. 2, pp. 79–94). Cambridge: Cambridge University Press.
- Tironi, M., & Rodríguez-Giralt, I. (2017). Healing, knowing, enduring: Care and politics in damaged worlds. *The Sociological Review*, 65(2_suppl), 89–109.
- Tironi Rodó, M., Rodríguez-Giralt, I., & Guggenheim, M. (2014). *Disasters and politics: Materials, experiments, preparedness*. Malden, MA: Wiley-Blackwell.
- Tomm, K., George, S. S., Wulff, D., & Strong, T. (2014). *Patterns in interpersonal interactions: Inviting relational understandings for therapeutic change*. New York, NY: Routledge.
- Wall, K. (2018). *Who needs experts? Counter-mapping cultural heritage*. London/New York, NY: Taylor & Francis.
- Warner, C. (2015). *Participatory mapping: A literature review of community-based research and participatory planning* (pp. 1–20). Cambridge, MA: Massachusetts Institute of Technology, Social Hub for Community and Housing, Faculty of Architecture and Town Planning.
- Wisner, B., Gaillard, J. C., & Kelman, I. (2012). Framing disaster: Theories and stories seeking to understand hazards, vulnerability and risk. In *Handbook of hazards and disaster risk reduction* (pp. 47–62). London: Routledge.

Chapter 4

Paved with Good Intentions? The Road of the Humanitarian Project of DNA Identification of the Missing in Post-Conflict Cyprus



Anna M. Agathangelou and Kyle D. Killian

Introduction

In Cyprus, violence comes in various forms, some emerging out of development and governance projects, however well intended. Here we examine the humanitarian project of DNA identification of the missing in Cyprus and its effects on the professionals and families involved. Interviews with anthropologists, psychologists, and surviving family members shed light on the social and political complexities inherent in the identification and symbolic “return” of lost family members. This chapter draws on interviews with human rights activists, forensic scientists, and the relatives of those missing and disappeared in nationalist violence to trace how evidence and claims making are pivotal in both state making and healing. It shows how state officials, relatives, and forensic scientists, are guided by different epistemologies, and desires and find themselves constantly negotiating healing and justice claims.

Humanitarian Projects, DNA Forensics, and Identification of the Missing

Cyprus gained independence from the British Empire in 1959 and was juridically divided along ethnic and racial lines: Greek and Turkish Cypriots as the two major political groups embodying the postcolonial state, with Britain, Greece, and

A. M. Agathangelou
York University, Toronto, ON, Canada

K. D. Killian (✉)
Capella University, Minneapolis, MN, USA
e-mail: kyle.killian@capella.edu

© Springer Nature Switzerland AG 2019
L. L. Charlés, G. Samarasinghe (eds.), *Family Systems and Global Humanitarian Mental Health*, https://doi.org/10.1007/978-3-030-03216-6_4

35