

Adam Logeman

Nicaragua, Research Grant

Summer 2015

Understanding the Relationship Between Structural Violence and Structural Vulnerability:

A Study of Housing in Nicaragua

In 2010, a magnitude 7.0 earthquake struck Haiti and killed an estimated 300,000 people and destroyed 200,000 houses, displacing almost 40,000 families. The country was immeasurably unprepared for such an event given the insufficient building methods used. The vulnerability of developing countries like Haiti is typically manifested in the dramatic losses of civil infrastructure in the wake of major disasters. These structural vulnerabilities silently persist throughout the developing world until a disaster exploits them. The devastation witnessed in these events is but an outward manifestation of the crippling effects of structural violence that persisted well before them. Structural violence, as coined by Johan Galtung, is any type of social injustice that prevents people from achieving basic needs. Structural vulnerability is specifically structural engineering inadequacy. These arrangements often extend to political and economic systems where their consequences can have even farther reach, paralyzing families in multiple dimensions of their lives and livelihoods. In order to enhance the resilience of communities in developing nations, it is essential to identify the relationship between structural violence and structural vulnerability well before the vulnerabilities are directly revealed.

This project was aimed at finding relationships between structural violence and structural vulnerability in a developing area of rural Nicaragua. In conjunction with Engineering 2 Empower, this research will supply information on the engineering condition in this community and allow Notre Dame civil engineering researchers, including myself, to formulate models of

the houses and study the structural integrity of the houses. This research, however, will not only provide these engineering assessments, but also provided a cultural, anthropological study of the community and a search for factors manifested in the poor structural engineering. In other words, it was figured that the houses would not be built to high standards; I wanted to know why this was the case. I wanted to find at least one cultural factor that played into the local construction. It was known that this is an impoverished community, and the lack of financial resources is no doubt an inhibiting factor in their ability to build their houses. However, this study was aimed at finding additional factors that may have been hidden underneath the obvious factor that is the lack of money, specifically in a high-risk natural disaster area which has not recently experienced a significant natural disaster compared to Haiti, for which the majority of E2E's research takes place.

It did not take long to accomplish many of my research goals. The community members were more than willing to let me walk through their houses and conduct engineering assessments. I have much researched data on the engineering methods and inadequacies in the community. Through a standardized engineering survey, I was able to walk through the houses and record comments about the specific members and systems used and take pictures to support these findings.

Once I was confident in the engineering data obtained, I began to conduct interviews with the communities to hear stories about their lives and understand the way that they live and how this may affect the way they build houses. Within days I was able to find the most significant inhibiting factor of progress in the community. The local government, or municipality, had shown a pattern of neglect and inaction that had left much of the community feeling cheated, ignored, and helpless. Nearly every community member I talked to had numerous stories and

frustrations to share about how they did not feel that they could rely on their government for anything, especially not in ways to improve their homes. Many people do not have the financial resources to improve their houses on their own, and need to rely on external assistance to do so – from the government or aid organizations. The municipality had a habit of promising housing repairs and materials to those who needed it. These promises, however, would usually fall around election time. Once the election was over and the political party had secured its victory, the promises went unfulfilled. There are numerous examples provided by the community of such events, specifically pertaining to the housing situation. This information provides support for the claim that the inaction of the government is one factor of structural violence that manifests itself in structural vulnerability.

Aside from the collection of research, I was able to facilitate conversations with the community members and help them understand the importance of community cohesiveness. After past projects have failed, the community has tended to get frustrated and divide on important matters. This will not help them achieve anything in the future. If they want to improve their living situation, they must come together and take it upon themselves to get things done. Additionally, I was able to simply listen to their stories. Many of them feel that they are ignored when they try to state their case; I believe I am helping to amplify their voice.

Although I was successful in many aspects of my research, there were many challenges that I faced along the way. There was a lack of construction happening in the community so I was not able to see many houses in the process of being built – only in the finished state. Additionally, I found myself needing to constantly remind the community that I was not there to fix their houses. I was not part of an aid organization that would assess their houses and determine if they qualified for a new one, as many of them originally saw me. I was simply

there to gain an understanding of the way they live and build their houses. Also, in addition to gaining knowledge from the community, I found it important to also hear from the municipality about past projects. However, many municipality members were hesitant to give me any information and I found it difficult to learn how they go about their business.

This research will hopefully aid E2E in building models of the houses to test the structural integrity and see what would happen if there were a major earthquake or hurricane in the area. With this information, we may be able to partner with other organizations in improvement projects in the community. I plan to support a thesis with the information that was collected and write an effective report on the life of the rural community and the associated developmental practices. Much of my cultural research was qualitative, so I hope to find concrete ways to support my thoughts given a lack of quantitative, objective data.

I am very pleased with the amount of information I was able to gather while in Nicaragua. I was able to obtain a great amount of research data that relates to my original question and will help to solve it. I was blessed by the willingness and hospitality of the community in Amayito to allow me to look into their lives for a brief time. Although there were challenges along the way, I was able to listen to them and make them feel heard. I hope this project does not finish at the end of the semester; I hope to continue a relationship with the community in the future and use the information I gathered to provide insight for further affiliations so we may be able to help them receive the respect they deserve.