Learning in an environmental social movement: walking and learning with the poor

Eliezer Colon-Rivera
ABSTRACT

LEARNING IN AN ENVIRONMENTAL SOCIAL MOVEMENT:
WALKING AND LEARNING WITH THE POOR

Eliezer Colón-Rivera, Ed.D.
Department of Counseling, Adult and Higher Education
Northern Illinois University, 2018
Jorge Jeria, Director

This autoethnographic study explores how participants in the environmental social
movement in Cidra, Puerto Rico, learned and produced knowledge. The data was obtained
through the narration of my personal experiences as an environmental activist and founding
member of Comité Despertar Cidreño, eleven individual interviews with members and
sympathizers of the group, and a collective interview in the form of a focus group.

The autoethnographic narrative and interviews with the research participants illustrate a
production of knowledge ranging from the skills and abilities necessary to organize the
struggles to the experience and knowledge about the natural environment. The study suggests
that the use of participatory action research (PAR) as a tool for research and transformation, as
part of Freire’s popular education conceptual framework, encouraged participants to become
aware that their experiences and practices produce knowledge.

The study reiterates what research on learning in social movements has demonstrated:
that most of the learning is informal learning. Furthermore, the individual interviews and focus
group helped participants become aware of the vast amount of learning that took place during
the environmental struggles. This learning, generally incidental, was not recognized before as
learning by them.
ACKNOWLEDGEMENTS

I wish to convey my sincere appreciation to Professor Jorge Jeria for his guidance and advice. It was a unique opportunity to have as an advisor a popular educator of international stature such as him. His help made easier the research and writing of this dissertation. I would like to recognize Dr. Laura Johnson for her methodological guidance on qualitative research and knowledgeable observations regarding community-based research.

I would like to thank Dr. LaVerne Gyant for her encouragement and thoughtful advice in developing my dissertation proposal and Professor Cornelius K. Gilbert for his insightful comments and encouragement.

My heartfelt appreciation also to the members of Comité Despertar Cidreño who enthusiastically embraced my research as their own and participated in the interviews and focus group. A posthumous recognition to Ana Julia Rodríguez and Francisco de Jesús, two distinguished grassroots leaders in the movement to close Cidra Landfill, who passed away before the completion of this study.

I would also like to acknowledge Shelmey Diaz Cortés for transcribing the interviews and my brother Ezequiel Colón-Rivera for helping to proofread the manuscripts. My gratitude also to Arnaldo (Naldin) Rodríguez for helping with formatting and assembling the document.

My gratitude to the congregation and pastors, Arturo J. Siaca Rentas and Dr. Jaime Rodríguez, of Cidra’s First Baptist Church for their encouragement and prayers throughout this endeavor.
My appreciation also to Jackeline Partipilo, physical therapist, and Dr. Jon Whitehurst, orthopedic surgeon at OrthoIllinois in Rockford for their assistance and care of a severe frozen shoulder syndrome I suffered while working on the dissertation.

Just as important, I would like to thank my family: my wife María Bustamante for her constant spiritual support and encouragement while writing this dissertation, especially during my illness and moments of uncertainty. Thanks as well to my sons Eduardo and Eliezer, Jr., who inspired me to overcome obstacles and finish this project.
DEDICATION

To my mother, Esther Rivera Figueroa, who inspired me to love nature and seek justice, and the late, Pablo Emilio Colón Chévere, my father who taught me that there is poetry in daily life.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF FIGURES</th>
<th>viii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF APPENDICES</td>
<td>ix</td>
</tr>
</tbody>
</table>

## Chapter

1. **INTRODUCTION** ................................................................. 1
   - Background ................................................................. 1
   - Significance ............................................................. 8
   - Purpose of the Study .................................................. 9
   - Freire’s Popular Education Conceptual Framework ........ 10
   - Overview ........................................................................ 12

2. **LITERATURE REVIEW** .......................................................... 14
   - Learning ........................................................................ 14
   - Theories of Learning .................................................. 15
   - Informal Learning ..................................................... 19
   - Knowledge Production .............................................. 22
   - Social Movements ..................................................... 25
   - Social Movement Learning ........................................ 25
   - Popular Education .................................................... 29
   - American Popular Education: Myles Horton ................. 32
   - Brief Synopsis of the Concept of Popular Education in Latin America ........ 36
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaking with Orthodox Views of Social Transformation</td>
<td>39</td>
</tr>
<tr>
<td>Participatory Action Research (PAR)</td>
<td>39</td>
</tr>
<tr>
<td>Participatory Action Research in North America</td>
<td>41</td>
</tr>
<tr>
<td>Flexibility and Diversity in the Application of PAR</td>
<td>43</td>
</tr>
<tr>
<td>Youth Participatory Action Research and Popular Education</td>
<td>44</td>
</tr>
<tr>
<td>Chapter Summary</td>
<td>47</td>
</tr>
<tr>
<td>3 PUERTO RICO’S ENVIRONMENT AND POLICIES</td>
<td>49</td>
</tr>
<tr>
<td>Emergence of the Environmental Social Movement</td>
<td>51</td>
</tr>
<tr>
<td>The Boom of the Pharmaceutical Industries Under Section 936</td>
<td>52</td>
</tr>
<tr>
<td>Laxness in Environmental Regulations</td>
<td>56</td>
</tr>
<tr>
<td>Vieques: A Milestone in the Environmental Struggle</td>
<td>59</td>
</tr>
<tr>
<td>936 Companies Left a Contamination Trail in Cidra</td>
<td>60</td>
</tr>
<tr>
<td>Shift in Puerto Rico’s Economic Model</td>
<td>62</td>
</tr>
<tr>
<td>The Fiscal Control Board (FCB)</td>
<td>64</td>
</tr>
<tr>
<td>Hurricane María Aftermath</td>
<td>67</td>
</tr>
<tr>
<td>Chapter Summary</td>
<td>71</td>
</tr>
<tr>
<td>4 METHODOLOGY</td>
<td>73</td>
</tr>
<tr>
<td>Autoethnography</td>
<td>74</td>
</tr>
<tr>
<td>Autoethnographic Tools</td>
<td>76</td>
</tr>
<tr>
<td>Data Collection</td>
<td>76</td>
</tr>
<tr>
<td>Research Questions</td>
<td>78</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Police intervention in Vista Monte community, August 1986</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Vista Monte residents marching through the streets of Cidra, August 1986 in protest for police intervention in the community</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Derrame de desperdicios tóxicos vertedero de Cidra [Spill of toxic waste Cidra’s Landfill]</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>“Humberto Lleras (decd.) shows a catfish from Cidra Lake with ulcers in the head where at this moment there is dangerous contamination of fish, and therefore the mortality [of fish] has increased.”</td>
<td>54</td>
</tr>
<tr>
<td>5</td>
<td>B. De La Torre. “Toxic Waste Piling Up.”</td>
<td>57</td>
</tr>
<tr>
<td>6</td>
<td>Cidra groundwater contamination site</td>
<td>61</td>
</tr>
<tr>
<td>7</td>
<td>A photo sequence of two sections of Lake Cidra appears. In the picture above you can see the unusual way in which flowers have reproduced</td>
<td>89</td>
</tr>
<tr>
<td>8</td>
<td>The Associated Press. (1986, September 19). “Order Against Cidra Group Blocked”</td>
<td>103</td>
</tr>
<tr>
<td>9</td>
<td>Children holding banner and flag at first planting of trees near Cidra’s landfill</td>
<td>118</td>
</tr>
</tbody>
</table>
# LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Notes on the History of Environmental Struggles in CIDRA and Despertar CIDREÑO Committee from 1986 to 2016</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>NOTES ON THE HISTORY OF ENVIRONMENTAL STRUGGLES IN CIDRA AND DESPERTAR CIDREÑO COMMITTEE FROM 1986 TO 2016</td>
<td>146</td>
</tr>
<tr>
<td>B</td>
<td>INDIVIDUAL INTERVIEW GUIDE</td>
<td>164</td>
</tr>
<tr>
<td>C</td>
<td>FOCUS GROUP INTERVIEW GUIDE</td>
<td>166</td>
</tr>
<tr>
<td>D</td>
<td>CIDRA LAKE</td>
<td>168</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Look at him; he is planting futures
downpours and tornadoes,
walking on rocks
with the neighborhood poor.
Making afternoons long
stealing time and tiredness
closing doors and ears
to merciless wolves.
Look at him,
he is going to launch a downpour of verbs on the fields.

Dreamer of Futures, dedicated to Eliezer Colón (Ortiz Colón, 1990)

Background

On August 28, 1986, at night, a demonstration of protest disrupted the quietness of the
town in Cidra, Puerto Rico. The residents of Vista Monte community were angry, marching and
chanting slogans against an American corporation and the Puerto Rican government. The
neighbors of the community were irritated because the Tactical Operations Unit of the Police of
Puerto Rico entered the community in the morning before, pushing the neighbors and removing
barricades to allow the construction of a pipeline through the streets of the community.

By 1986, I had joined the Vista Monte Neighbors Committee in Cidra, Puerto Rico,
where I lived. Neighbors mobilized to stop a construction crew from connecting the sewerage
from a hospital being built near the neighborhood. The pipe would unload the sewage into a
small wastewater treatment plant nearby. The facility was discharging raw sewage into the Sabana River, a tributary of Lake Cidra.

Figure 1. Police intervention in Vista Monte community, August 1986. Photo courtesy of Rosita Guzmán, Comité Despertar Cidreño.

This lake has become an important part of cultural identity for Cidreños, and the issues that affect the reservoir have become part of collective claims from the environmental social movement. As reported by Soler-López (1999), the reservoir “was constructed in 1946 as a 6.54-million-cubic-meter supplemental water supply for the San Juan metropolitan area. The reservoir impounds the waters of Río de Bayamón, Río Sabana, and Quebrada Prieta” (p. 1).
Cidra is a town of approximately 40 square miles located in the eastern-central part of Puerto Rico. It is about a one-hour driving distance from the capital, San Juan. In the 1970s, it was one of the poorest municipalities in eastern-central Puerto Rico, with an average income of 566 dollars per person according to the United States Bureau of the Census, Population Division (1970). In 1976, an industrial corridor based on tax exemption was established, and industries like Coca-Cola, Pepsi-Cola, Millipore, SKB, Zenith Laboratories, and Wesley-Jensen were built. Pollution to Lake Cidra accompanied the economic development that these industries brought to Cidra (Colón-Rivera, 2003).

Figure 2. Vista Monte residents marching through the streets of Cidra, August 1986, in protest of police intervention in the community. Photo courtesy of Rosita Guzmán, Comité Despertar Cidreño.
The dire conditions of the lake and the threat of adding more contamination to the reservoir and surroundings led Vista Monte community residents to organize multiple actions to stop the hospital from connecting to the treatment plant. Such activities included meetings, chats, vigils, and demonstrations.

The construction company started excavating the pavement, and the organized neighbors used civil disobedience to stop them. The builders and the hospital owners sued the neighborhood committee, and the court granted an injunction to prevent neighbors from interfering with the pipeline construction. However, we defied the order and fought back with marches and demonstrations.

After a trial that lasted three months, the community prevailed, stopping the project and winning the fight. The residents were able to halt the construction project endorsed by the government agencies, and news spread throughout Puerto Rico about the courage and determination of Vista Monte neighbors.

Inspired by the Vista Monte struggle achievements, I started contacting persons involved in community struggles to talk about environmental issues in Cidra. We hosted a town meeting on May 14, 1987, at Cidra’s Cultural Center. Attendants at the meeting decided to organize a committee to strengthen the people’s struggles. They approved the inception of Comité Despertar Cidreño (Cidra Awakening Committee) with five objectives:

1. To improve living conditions in communities and protect the environment.
2. To stop pollution of Lake Cidra.
3. To improve the quality of drinking water in Puerto Rico.
4. To raise awareness of the need to mobilize and organize.
5. To join forces with other groups working toward environmental and social justice.

(Colón-Rivera, 1993, p. 3)
The committee started to work immediately, denouncing environmental problems and publishing a newsletter that addressed community concerns. This newsletter was distributed to the affected communities, schools, and churches, and its quality and quantity increased as learning about popular communication developed.

One of the most pressing issues concerning pollution was taking place in Sector Justo Rodriguez of Barrio Arenas in Cidra where a landfill was located. It was located next to the neighborhood, and there was suspicion that the contamination was causing multiple health problems, including respiratory, skin, and gastrointestinal illnesses. The landfill had been used for years to deposit dangerous and toxic waste from various industries of the region. Neighbors complained of fires taking place in the landfill; it was even causing severe health problems for the residents of Barrio Arenas (Arenas Ward) southeast of downtown Cidra (De La Torre, 1989).

Figure 3. Derrame de desperdicios tóxicos vertedero de Cidra [Spill of toxic waste Cidra’s Landfill]. 1989, July 24, La Semana [Caguas], p. 10.
In a community meeting, residents of Sector Justo Rodríguez decided to block the entrance of the landfill and close it. The community spokesperson, Ana Julia Rodríguez, invited Comité Despertar Cidreño to support the struggle. I received a telephone call from Ana Julia the evening before the day of the blockade informing me that the protest would take place early in the morning. I conveyed the information to everyone I thought would help and show solidarity with their neighbors.

The next day, December 28, 1987, I was with a group of neighbors from Barrio Arenas blocking the entrance to the municipal landfill. By mid-morning, a big line of garbage trucks was held on the road due to the human barrier we established. Many television reporters were at the site, and it was expected that the demonstrators would be arrested.

At noon, the mayor of Cidra, the municipal judge, and the police tried to convince the neighbors to let the garbage trucks enter the landfill. In exchange, the mayor offered to designate a committee of the municipal assembly to conduct hearings and recommend alternatives. Tano, one of the protestors said, “We prefer to be arrested than to live amidst fumes and diseases.” At that moment, the judge ordered the group to move to the side of the road. Spokesperson Ana Julia replied, “What kind of blockade is one in which you let the vehicles move freely? We will not move.” The disgruntled judge ordered the police, “Arrest this group of people for disobeying an order.”

Immediately, the police ordered us to enter a police van. Mothers took their children with them; neighbors and I followed. Fifteen of us were inside the vehicle, and I started shouting, “Por el derecho a la salud y a la vida, no queremos contaminación en Cidra” [For the right to health and life, we do not want pollution in Cidra]. All of us started shouting as we were
traveling through the streets of the town. People on the streets looked at us with curiosity. A group of people from the town moved to the court and provided us with lunch. Alejandro Torres Rivera, a lawyer with a long history of representing workers and militant students, represented the group. After a few hours, we were accused of obstructing traffic and were released without bail until the day of the trial.

During the blockade and press conferences, Doña Chan, Tano, Ana Julia, Miguel, and other neighbors described the situation of having the landfill in their neighborhood. They had a sagacious knowledge of the pollution and fires happening at the place. I learned from the wealth of experience of the people in this community. Their enthusiasm and commitment to social change were contagious. It was rooted in their daily life and motivated by the need for justice.

Inspired, I founded Taller de Educación Alternativa (Alternative Education Workshop [TEA]) in 1989 with the help of community leaders and activists. TEA developed workshops to teach popular education methods to community leaders as part of a series of strategies to stimulate active participation. We also developed workshops with the members of community organizations to deepen environmental understanding, starting from their knowledge, feelings, and life experiences.

I was part of these experiences along with many humble people from the Cidra community. In this autoethnography, I intend to tell my story and allow participants involved in community struggles to be part of this narrative so that their voices are also heard. The environmental social movement in Cidra, Puerto Rico, encouraged diverse education and social action learning practices. The practices combined informal learning using popular education methods.
Significance

The research will contribute to the field of informal learning and the production of knowledge in a social movement. Academic literature interest in social movements learning has increased with the eruption of social movements in the discussion of global issues. Topics range from globalization in the economy, social and economic justice, democratization, and global environmental problems. Nevertheless, at a local level, there is a constant struggle for improving the quality of life of the citizen. It is an exercise of democratic participation in daily life issues.

According to Tilly and Wood (2009), in social movements people organize to make collective claims called campaigns, they use a variety of organizational forms to achieve their goals, and show worthiness, unity, numbers, and commitment.

Environmental education that promotes significant community participation and learning has been considered essential to sustaining the social and natural environment in global conferences, agreements, declarations, and charters. One such example is the 1972 United Nations Conference on the Environment in Stockholm. It is troubling that there is only a small amount of published research in the field of popular and informal environmental education (Flowers, Guevara, & Whelan, 2009).

There is minimal research that theorizes informal learning and the production of knowledge through participation in social movements (Choudry & Kapoor, 2013; Foley, 1999; Hall, 2009). This study contributes to the field of adult education and learning in environmental social movements, and it disseminates the learnings through the voices of social movement protagonists.
Purpose of the Study

The learning experiences of environmental social movement activists have not been told from the point of view of the participants. Through an autoethnography, I will relate and analyze my learning experiences and the learning processes of a social movement. This research will contribute to the academic knowledge of learning in a social movement. Furthermore, it will help to document the history of the environmental social movement in Cidra, Puerto Rico.

The purpose of this autoethnography is to illustrate how the participants produced knowledge and learned in an environmental social movement that adopted Paulo Freire’s popular education framework. The research questions that guided the study are:

1. What sort of learning occurs in a social movement and how does this learning align with Freire’s popular education conceptual framework?

2. How do participants in the environmental social movement produce knowledge?

3. How do participants become aware of their knowledge?

4. How does incidental learning occur?

The data was collected in a variety of ways. Eleven individual interviews were conducted with members, collaborators or community leaders related to environmental struggles in Cidra. The one-on-one interviews lasted 30 to 45 minutes; the focus group interview was conducted with five active members and a collaborator to the group which lasted one hour and 12 minutes. The interviews were recorded and transcribed in Spanish and transcripts were later translated to English.
The data collected included my reflection as a member and leader of Despertar Cidreño and examination of documents (i.e., meeting minutes, publications, newspaper articles, interviews).

Freire’s Popular Education Conceptual Framework

Among the fundamental elements that characterize the philosophical and methodological proposal of popular education as developed by Paulo Freire are praxis (action-reflection), participatory action research (PAR), dialogue, and conscientization. In 1969, Freire in his book *Education as a Practice of Freedom*, established a philosophy and educational practice that provide the elements of participation to learners in social and educational processes as researchers, subjects of their own education, and above all, promote social and political action to transform injustices and oppression.

Freire's literacy method entails a philosophical vision that connects the process of learning to read and write with social and political action to transform society. According to Gadotti (1990), Freire’s method to develop a critical awareness (conscientization) comprises three stages. The first, research that explores the topics of daily life and the social group of participants of literacy processes’ obtains the words and generates themes. The second stage is the analysis of the generative themes in their social context to prepare the phonetic families and use them as examples to read and write. The third step is the analysis of the real conditions of life of the participants and through this process discover the need to take cultural and social action to eliminate the obstacles to have a fulfilling life.

The education that Freire (2001) proposes requires a dialogue in which both the facilitators and participants have humility:
Dialogue, as the encounter of those addressed to the common task of learning and acting, is broken if the parties (or one of them) lack humility. How can I dialogue if I always project ignorance onto others and never perceive my own? How can I dialogue if I regard myself as a case apart from others—mere "its" in whom I cannot recognize other "I"s? How can I dialogue if I consider myself a member of the in-group of "pure" men, the owners of truth and knowledge, for whom all non-members are "these people" or "the great unwashed?" (p.88)

An integral part of the framework is participation as a critical concept in the educational process. Since its beginnings, Freire’s literacy method encouraged the participatory action research approach to peoples’ involvement in the social and political struggle. He made it clear when he expressed, "I have to use methods for research involving the person in the area who is being studied as investigators. They should take part in the research themselves and not serve as passive objects of the study" (Freire, 1982, p. 30).

McIntyre (2008) declares that Freire’s concept of concientization and critical reflection as necessary for individual and social change and his “commitment to the democratic dialectical unification of theory and practice have contributed significantly to the field of participatory action research” (p. 3).

Another fundamental element in Freire's philosophy is the concept of praxis. He defines it in Pedagogy of the Oppressed: “This can be done only by means of the praxis: reflection and action upon the world in order to transform it” (2001, p. 126). Popular education in Freire is linked with transforming action that breaks with the traditional vertical relation between the one that knows and the one that is ignorant, proposing an exchange dialogue between people with different academic experiences and practices instead. The Freirean approach to popular education has contributed to the development of a wide variety of participatory methods and
techniques that have helped significantly to democratize educational relationships and in that way democratizing social movements (Vio Grossi, 1989).

Freire (2001) himself underlines the importance of praxis:

It is only when the oppressed find the oppressor out and become involved in the organized struggle for their liberation that they begin to believe in themselves. This discovery cannot be purely intellectual but must involve action; nor can it be limited to mere activism, but must include serious reflection: only then will it be a praxis. (p. 65)

Freire’s theoretical approach implies that education must be a permanent process that allows human beings to move more and more towards the collective appropriation of their own lives. Its ultimate sense is to promote growing collective autonomy processes that will enable ordinary people to have power over themselves and the environment around them, in other words, personal and collective self-determination. The movement of popular education has emerged as a profoundly critical movement against arbitrary imposition of ideas and decisions of those who have power over others who do not (Vio Grossi, 1989).

Overview

Chapter II presents background information on Puerto Rico and its environmental issues and struggles. It pays attention to the economic transformations and how the environmental social movement’s struggles relate to these changes and transformations.

Chapter III is the literature review, which outlines scholarship about knowledge production and how scholars approach knowledge production regarding informal learning, social movement learning, and popular education.

Chapter IV is the methods chapter. I discuss the autoethnographical approach and the collection and analysis of data. My personal experience is narrated in an autoethnography.
format. Also, I explain how socio-political and my own experiences have impacted the popular education framework.

Chapter V considers the experience and learning of the environmental social movement in Cidra; interviews with members of Comité Despertar Cidreño and community leaders are analyzed and discussed.

Chapter VI presents the inferences and recommendations of this dissertation.
CHAPTER II
LITERATURE REVIEW

Learning

Learning is a fundamental aspect of human life. A concise definition of learning is “the activity or process of gaining knowledge or skill by studying, practicing, being taught, or experiencing something” (Merriam-Webster Dictionary). Although learning is central to create sustainable and decent living conditions for humanity, few studies theorize informal learning and social movements learning (Choudry & Kapoor, 2013; Foley, 1999, 2004; Hall, 2009). Foley (2004) explains that learning is the primary mode of adaptation in human beings. If humans do not learn, they will not survive. All human activity has a learning dimension. People learn continuously, formally and informally in many different scenarios: in the workplace, at home, in the community and in political action (Foley, 2004). This review discusses literature in learning, the primary forms of adult learning, and the conceptual popular education framework of learning in social movements.

As explained by Schunk (2012), learning can be defined as attaining and adapting “knowledge, skills, strategies, beliefs, attitudes, and behaviors. People learn cognitive, linguistic, motor and social skills, and these can take many forms” (p. 2). Learning theories are descriptions of what happens when learning takes place (Merriam & Bierema, 2014). From the academic perspective, Bredo (1997) tells us that contemporary learning theory is confronted with several challenges. These difficulties arise primarily from the divide of learning theory into two different
fields: behaviorist and cognitivist. There is no consensus around learning theory about how many theories there are that explain the process of learning or what perspectives of learning constitute theories (Merriam & Bierema, 2014).

From the field of adult education, Taylor (2005) maintains that even though learning is a fundamental concept in adult education, frequently the term is not defined because it is assumed that the meaning is understood. Taylor explains that one way of clarifying the meaning of learning is to look at its theoretical foundations. In line with his vision, definitions of learning depend on what theoretical perspective is being used. For the purpose of this study, four theories of learning are considered: behaviorism, cognitivism, situated learning, and constructivism.

Theories of Learning

Behaviorism presupposes that learning is an observable and external episode more than an internal mental event: “It is a response to elements in the environment and the outcome of learning is seen as a change in behavior” (Taylor, 2005, p. 349). In other words, “learning is a change in behavior” (Merriam & Bierema, 2014, p. 25). According to Bredo (1997) and Schunk (2012), behaviorism presupposes that the learner is fundamentally passive, responding to environmental causes.

Behavior is manipulated through positive reinforcement or negative reinforcement. Together, positive reinforcement and negative reinforcement enhance the likelihood that the wanted behavior will occur (Schunk, 2012). Retribution reduces the probability that the behavior will take place for the second time. Positive reinforcement identifies the application of a stimulus. Negative reinforcement entails the suppression of a stimulus. Some significant
contributors to the theory of behaviorism are Watson, Pavlov, Thorndike, Skinner, and Guthrie (Schunk, 2012).

Cognitivist theory changed conceptions about behaviorism in the 1960s as the leading paradigm (Bredo, 1997; Schunk, 2012). A significant challenge to behaviorism had originated from studies on observational learning led by Albert Bandura. His research found that people could learn new actions just by observing others carry them out. Observers did not have to complete the actions at the time of learning (Schunk, 2012). As stated by Schunk (2012), “Reinforcement was not necessary for learning to occur. These findings disputed central assumptions of conditioning theories” (p. 118).

Bredo (1997) discusses this cognitive revolution in the theory of learning by graphically describing the redirection of the research. From outside to inside, it was a complete turnaround: “It replaced outer reinforcement contingencies and trial and error search behavior with inner problem representations and simulated search. The structures and processes previously located in the environment were placed inside the learner's head” (p. 29).

The cognitive orientation is based on analyzing the internal mental processes of the human mind (Bredo, 1997; Schunk, 2012; Taylor, 2005). This theory is also known as information processing. A metaphor commonly used to explain this orientation is the computer model. In this model, learning is understood as information input from the environment, processed by the memory, and output in the form of some learning (Merriam & Bierema, 2014; Taylor, 2005). Principal contributors to the theory of cognitivism are Merrill, Reigeluth, Gagne, Briggs, Wager, and Bruner (Schunk, 2012).

Bredo (1997) explains how the behaviorist and the cognitive approaches view learning as an individual process. He uses the metaphor of the single organism as follows:
A learning theory that focuses on the "lone organism" to the exclusion of its participation in social activities is like a theory of learning to make music by oneself. Such a theory is likely to ignore all the sharing, the mutual construction, and modulation that is the essence of musical meaning. If one thinks of language use and reflective thinking as similarly social in character, like making music, then a narrowly individualistic approach to learning is likely to shortchange understanding these processes as well. The fact that behavioristic theories have tended to ignore mind while cognitive theories have tended to posit mental processes already in place lends some credence to this suspicion. (p. 4)

Bredo (1997) concludes that behaviorism and cognitivism stress learning from a one-sided perspective, either of the environment or the organism. They tend to display an important distinction between thinking and behaving, or mind and body. One does not have to be a Marxist to see a potential social class division in these contrasting approaches to learning, with a behavioristic approach being well-adapted to the education of workers, and a cognitive approach well-adapted to the education of managers. (p. 41)

The theory of situated learning is an effort to bridge the schism between these two opposing views: behavioristic and cognitivist (Bredo, 1997). Situated learning has a social relational approach to learning. Schunk (2012) illustrates the difference between cognitivism and situated learning: “Situated cognition (or situated learning) involves relations between a person and a situation; cognitive processes do not reside solely in one’s mind” (Greeno, 1989, as cited in Schunk, 2012, p. 233).

Bredo (1997) analyses three different contributions to an understanding of learning as situated: 1) Hubert Dreyfus's (1972/1979) evaluation of the computational view of cognition; 2) Lev Vygotsky's (1978) discussion on the social construction of learning; and 3) the anthropologist Lave's explanation on learning as a part of an apprenticeship in communities of practice (Lave & Wenger, 2011).

Bredo (1997) explains that Dreyfus (1972/1979) pointed out that the problem with the computer models of mind is that they are constructed on predetermined suppositions about what
is pertinent or significant. “As a result, the functioning of these systems is limited to situations whose contingencies have been built into them from the start, making them not generalizable across situations” (Dreyfus, 1972/1979, as cited in Bredo, 1997, p. 32).

Vygotsky (1978) was concerned with the social development of mind into what he called the higher mental functions. Inspired by Marx’s philosophy, he elaborated the concept that people's mental lives are developed by the social activities in which they participate. He maintained that higher mental functions advance through social interaction. Consequently, the social context is essential to learning. He expresses it in a diaphanous way:

An interpersonal process is transformed into an intrapersonal one. Every function in the child’s cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological), and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relations between human individuals. (p.57)

Schunk (2012) delineates the contours of the learning theory that developed from the works of Vygotsky (1978). He defines constructivism as a psychological and philosophical viewpoint in which individuals form or construct a great deal of what they learn and understand. The prominence that this theory places on the role of knowledge construction is essential to constructivism (Schunk, 2012).

Lave’s approach to learning is that it is a process that takes place not in an individual mind but a participation context. He stresses that the fundamental characteristic of learning as a situated process is “legitimate peripheral participation.” Lave and Wenger (2011) explain the concept:

Learning viewed as situated activity has as its central defining characteristic a process that we call legitimate peripheral participation. By this we mean to draw attention to the point that learners inevitably participate in communities of practitioners and that the mastery of knowledge and skill requires newcomers to move toward full participation in
the sociocultural practices of a community. “Legitimate peripheral participation” provides a way to speak about the relations between newcomers and old-timers, and about activities, identities, artifacts, and communities of knowledge and practice. It concerns the process by which newcomers become part of a community of practice. (p. 29)

As stated by Bredo (1997), it highlights that in learning as apprenticeship, the role of the learner changes as part of the learning process. The learner may commence as a peripheral participant and move in the direction of involvement in essential areas of the activity.

In conclusion, most learning that is relevant happens as an outcome of participation in the practice of a community. Bredo (1997) explains that the “metaphor of learning as apprenticeship can be seen both as an analytical tool for describing learning situations and a normative ideal for how learning ought to occur” (p. 38).

Informal Learning

Livingstone (2007) defines informal learning as "any activity involving the pursuit of understanding, knowledge or skill that occurs without the presence of externally imposed curricular criteria" (p. 204). Schugurensky (2000) declares that the classification of informal learning comprises all learning that takes place external to the curriculum of formal and non-formal educational organizations.

Schugurensky (2000) differentiates formal education and informal education. Formal education, in his view, is highly institutionalized, includes primary education that is obligatory, employs a prearranged curriculum that is approved by the state, and features institutional undertakings regulated by the state. It is organized in such a way that each level prepares the student for the next level, and in order to move to the next, it must approve the previous one. Its structure is pyramidal with the highest authority at the top and the students at the bottom. When
students complete the levels or grades, they are presented a diploma or certificate that allows them to further their education or to go into the job market.

On the other hand, non-formal education is comprised of all organized educational programs that occur outside the formal school system. Mostly they are short term and voluntary (Schugurensky, 2000). Schugurensky (2000) describes examples of these programs: “Tennis courses, second language programs, driving lessons, cooking classes, yoga classes, rehabilitation programs, painting courses, training programs, workshops, etc.” (p. 2). Informal teachers or facilitators are employed, and there is a curriculum to be implemented. Non-formal education is mostly focused on adults. However, children and adolescents can be part of non-formal education through after-school programs (Schugurensky, 2000), for instance, “Sunday school, boy-scouts and girl-scouts programs, second language courses, music lessons, sports” (p. 2).

Schugurensky (2000) developed a taxonomy of informal learning based on intentionality and consciousness. He identifies “three forms of informal learning: self-directed learning, incidental learning, and socialization” (p. 3). Schugurensky (2000) explains that self-directed learning is exemplified by learning projects started by individuals or a group without the support of a teacher, instructor, or facilitator. A resource person can be present but is not considered a teacher in the traditional sense. It is intentional because the individual has the goal of learning. He is conscious because the individual becomes aware that he has learned something.

Schugurensky (2000) clarifies why he deliberately uses the concept of informal learning and not informal education:

In the concept of 'informal learning' it is important to note that we are deliberately using the word 'learning' and not 'education,' because in the processes of informal learning there are not educational institutions, institutionally authorized instructors or prescribed curricula. It is also pertinent to note that we are saying 'outside the curricula of educational institutions' and not 'outside educational institutions,' because informal
learning can also take place inside formal and non-formal educational institutions. In that case, however, the learnings occur independently (and sometimes against) the intended goals of the explicit curriculum. (p. 2)

Incidental learning is described by Schugurensky (2000) as learning experiences that take place when there was no previous intent of learning. To some degree, “out of that experience, but after the experience, she or he becomes aware that some learning has taken place. Thus, it is unintentional but conscious” (p. 4).

Schugurensky (2000) explains socialization as “the internalization of values, attitudes, behaviors, skills, etc., that occur during everyday life” (p. 4). There was not a previous intention of attaining them and there was not awareness of a learning (Schugurensky, 2000). Learning through socialization is usually an unconscious practice. We can develop an awareness of that learning in the future by the process of retrospective recognition that can be internal as well as external (Schugurensky, 2000).

Research by Choudry and Kapoor (2013), Hall (2009), and Foley (1999) supports the conclusion that there is a considerable amount of academic literature on adult education and learning. However, there is very little literature that theorizes informal learning and the production of knowledge through participation in social and political action. The necessity exists to develop an understanding of learning in popular struggles (Foley, 1999). Academic research that seeks to comprehend social movements learning and knowledge production associated with them must answer the questions that arise from social movements.

Reflecting on practice is an integral part of analyzing knowledge that is produced in social movements. Critical learning takes place mainly through reflection on practice and analysis of experience more than in a mere academic discourse (Hall, 2009). Choudry and Kapoor (2013) point out that scholarly literature on adult education and learning is considerable,
yet relatively few attempts have been made to analyze informal learning and knowledge production through participation in social action. This corroboration of the importance of incidental learning taking place in social struggles suggests that to do those types of analyses one needs to write case studies of learning in the struggle.

Knowledge Production

From a philosophical perspective, the production of knowledge has to do with the way in which that knowledge arises. From this point of view, it is necessary to consider the social, economic, political, ideological, and even psychological factors involved in the process of knowledge elaboration. On the other hand, the validation of knowledge has to do with its justification. From this perspective, the theory of knowledge focuses on the methods used, the coherence of theories, and the requirements for evidence to be considered (Linares, 2005).

In adult education, there has been an emphasis on the relationship between “knowledge, experience and learning. Within this relationship, individuals’ experiences and the place in which learning occurs create the most relevant knowledge: experiential or “practice-based knowledge” (Boud, Cohen & Walker, 1993, as cited in Solomon, 2005, p. 335). As claimed by Solomon (2005), “There is an academic interpretation that views knowledge as an object or a body rather than a process” (p.335).

As stated by Cox and Flesher Fominaya (2009), social movements produce knowledge concerning the interactions of people and society. They explain that movements create knowledge from the ground up and that a significant characteristic of social movements practice is revealing things that are kept from public view, such as torture and extra-judicial executions, the effects of pollutants and global warming, levels of sexual violence, facts about poverty and
exploitation, among others. Cox and Flesher Fominaya (2009) declare that social movements underline “new ways of seeing the world: in terms of class or patriarchy, of colonization or neo-liberalism, of ecology and human rights” (p. 1).

Cox and Flesher Fominaya (2009) explain that Eyerman and Jamison (1991) underlined that movements are engaged in continuous processes of producing “counter-expertise, sometimes from their own resources, sometimes through finding allies in traditional intellectual professions such as academia, journalism, and the law, and sometimes through pushing the creation of new forms of knowledge” (p. 2).

A question that emerges is: How do movements produce knowledge? Cox and Flesher Fominaya (2009) asseverate that there are two approaches to answering this question. The response to the question can be analyzed as an “issue of subaltern knowledge as against official knowledge” (p. 4). What is known by the oppressed is hidden or denied by the oppressor. Another approach is to look at the processes of knowledge production that are associated with social movement development. These processes are related to the way in which movements produce “analyses of society, strategies and tactics, understandings of internal practice, and so on” (p. 4).

Cox and Flesher Fominaya (2009) affirm that through the processes of consciousness-raising people can come to express their unspoken comprehension of reality in ways that can contest structures of oppression. In the literacy method that Freire created, it was implicit that he and his supporters encourage people to be not only consumers of knowledge but also producers of knowledge.

Casas-Cortés, Osterweil, and Powell (2008) declare that “movements are not only enacting politics through protest and cultural contestation but are generating diverse
knowledges” (p. 17). They explain that contemporary movements are significant places of knowledge formation, development, and dissemination. They call these processes “knowledge-practices.” They claim that those knowledge-practices are a crucial element of the innovative and day-to-day practice of social movements. Casas-Cortés et al. (2008) further state that the hyphenated concept has the intention to get away from the abstract implications associated with knowledge, arguing for its actual and placed nature. Casas-Cortés et al. (2008) sustain that when we recognize movements as places and processes in which knowledges are produced and set in motion, then it requires that social movement researchers soften the boundaries among subjects and objects of knowledge production.

In the opinion of Casas-Cortés et al. (2008), when movements are viewed as knowledge-practitioners and not merely as activists or subjects to be studied by social movement researchers, their importance is rearticulated, challenging practices and methods of researchers.

They assert that, for the most part, the field of social movement studies has paid little attention to this area of research. They advocate for making visible knowledge production in social movements that exhibit a rich variety of practices. As Casas-Cortés et al. (2008) explain:

Despite these multiple and rich expressions of knowledge-practice, many social movements’ visibility in public and academic debates is still confined to media-grabbing mobilizations, concrete and measurable victories, or moments when bodily repression is suffered and sustained. The methodological and theoretical shift in social movement studies that we propose makes visible different goals and effects of knowledge production. Instead of detached, academic knowledge about movements that operate “out there,” we argue for the value of seeing the continuous generation, circulation and networked nature of heterogeneous knowledges, which in themselves work to make different futures possible—futures that do not exist in a narrow or campaign-specific space that closes once a certain demand has been met or a mobilization realized. (p. 51)
Social Movements

Della Porta and Diani (2006) defined social movements as diverse social processes, “consisting of the mechanisms through which actors engage in collective action, are involved in conflictual relations with clearly identified opponents, are linked by dense informal networks and share a distinct collective identity” (p. 20). Social movements develop when a sentiment of dissatisfaction spreads and insufficiently flexible institutions are unable to respond. Social movement actors engage in political or cultural conflict to promote or oppose social change (della Porta & Diani, 2006).

On the other hand, Tilly and Wood (2009) explain that social movements show the following characteristics:

1. They organize to make collective claims that Tilly and Woods call campaigns.

2. They make use of a variety of organizational forms to pursue their goals: creation of special-purpose associations and coalitions, public meetings, solemn processions, vigils, rallies, demonstrations, petition drives, statements to and in public media, and pamphleteering (called the variable ensemble of performances of the social movement repertoire) (Tilly & Wood, 2009, p. 4).

3. Members’ effort exhibit worthiness, unity, numbers, and commitment (WUNC) on the part of themselves and/or their constituencies.

Social Movement Learning

Chesters (2012) argues that some academic disciplines have been abundantly innovative in their approaches to social movements. However, in no small degree, social movements are considered as objects of knowledge for researchers rather than as knowledge producers.

As explained by Chesters (2012), social movements have long been transmitters of knowledge about systems of oppression and injustice. They have been active in expressing
political demands and bringing issues to the public discussion. Moreover, they have also been at
the vanguard of debates about gender, race, sexuality, age, and religion. They have been active in
underlining the social and environmental implications that range from “manufacturing processes
to nuclear fission, genetically modified organisms to cloning and nanotechnology” (p.153).

Social movements in the struggle for social justice produce knowledge that challenges
dominant schemes of power and interpretation of reality. Chesters (2012) discusses this
phenomenon and explains that there is a vast array of academic areas that have been nurtured
with knowledge elaborated in social movements, but the people forming part of these movements
have not been recognized as producers of that knowledge: “However, rarely are social
movements explicitly recognized as producers of knowledge, despite their influence in shaping
various academic disciplines including women’s studies, peace studies, adult and popular
education, black and post-colonial studies, queer studies, etc.” (p. 153).

Cunningham (2000) addresses the issue of learning and the production of knowledge in
social movements and introduces the concept of co-learning. Curry and Cunningham (2000)
define co-learning as “a strategy to encourage us to do intellectual activity. We actualize our
intellectual potential as knowledge makers, not simply as knowledge consumers” (p. 75). Co-
learning in their words is “a form of learning with and in communities, grounded in the direct
attempt to challenge power relations between dominant and oppressed groups and the notions of
expert and novice, teacher and learner” (p. 73).

As stated by Cunningham (2000), participation is a crucial concept in learning, and we
can see that participatory training, participatory evaluation, and participatory cultural formation
follow the logic of participatory research. The importance of participation in decision making in
educational strategies and determining the action (policy) make the learner a collaborator with
the educator and the educator also a learner. The concept of co-learning “flattens the hierarchical structure” (p. 575). The participatory view of education assumes that the positions of knowledge producer and knowledge consumer can be exchanged through participation in praxis.

The term “praxis” has been in use “since Aristotle, to whom praxis is one of the three basic activities of human beings (the others being ‘theoria’ or theory, and poiēsis, or skillful manufacture)” (Blackburn, 2016, p. 375-376). Blackburn (2016) affirms that in Marx the concept “becomes central to the new philosophical ideal of transforming the world through revolutionary activity” (pp. 375-376) and that praxis is also associated with free activity in contrast to the alienated labor required under capitalism. For his part, Paulo Freire (2001) defines praxis in Pedagogy of the Oppressed as "reflection and action directed at the structures to be transformed" (p. 126).

Reiterating the participatory view of learning, Cunningham (2000) reaffirms Gramsci’s concept that all people are intellectuals:

The recognition of all persons as potential organic intellectuals, creating knowledge through participatory research, developing critical pedagogical practice, celebrating popular cultural symbols and rituals, and working within social movements provide us opportunity to recreate our definition of adult education, one that reclaims our historical root. (pp. 584-585)

One of the definitions of the word “organic” is “forming an integral element of a whole: fundamental.” Antonio Gramsci (1999) amply discussed the concept of the organic intellectual in the Prison Notebooks. Gramsci posits that any social group in the area of economic production “creates together with itself, organically, one or more strata of intellectuals which give it homogeneity and an awareness of its own function not only in the economic but also in the social and political fields” (p. 134).
He continues by expressing that the workers even in the simple and mechanical jobs require a minimum of creative intellectual activity. The same condition exists for the businessman. In order to carry out his functions, the businessman must have a certain number of qualifications. Gramsci (1999) asserts that “all men are intellectuals; one could therefore say: but not all men have in society the function of intellectuals” (p. 140).

Finally, Gramsci (1999) affirms that one of the most important features of any group that is developing toward acquiring power is their struggles to integrate and conquer ideologically traditional intellectuals. However, this integration and conquest are more efficient the more the group succeeds in developing its own organic intellectuals. Nevertheless, there are interpretations of his theory that view the organic intellectual as “an intellectual who helps organize people in order to challenge the hegemony of the ruling classes” (Fusaro, Jason, & Fabry, 2017, p.54). The analysis of learning in the environmental social movement suggests that organic intellectual development goes beyond intellectuals becoming allies of the social movement. The practice in the environmental struggles in Cidra, Puerto Rico, shows, through the participants’ interviews, how the members of Comité Despertar Cidreño developed into organic intellectuals.

Cox and Flesher Fominaya (2009) affirm that through the processes of consciousness raising people can come to express their unspoken comprehension of reality in ways that can contest structures of oppression. English and Mayo (2012) assert that there is a learning facet in social movements. People learn through organization, educational activities, developing campaigns, marches, poster sessions, and others. They learn through participation in demonstrations about the issues and discussions about mobilization and organization methods. They explain that Foley’s case studies in Learning in Social Action (1999) highlight significant
community development that takes place in non-formal and informal learning. Foley (1999) points out that social movements need to learn new liberatory ideas and unlearn dominant ideologies. People need to unlearn the oppressive ideology and learn emancipating ideas.

Popular Education

Collins (1998) maintains that the first endeavor of popular education is to help people realize their potential for uniting in the direction of a fair and equitable society. Paulo Freire has been a leading figure in the popular education movement in Latin America since 1960 (Collins, 1998; Mayo, 1999; Mejía, 1990; Torres & Puiggros, 1997). An examination of his writings reveals a powerful influence of the dialectical methodology in its philosophical assumptions and his philosophy of knowledge (Mayo, 1999).

Some researchers in the field of education point out that Paulo Freire’s model of popular education was questioned, particularly in Latin America after the debacle of socialism in Europe. Torres and Puiggros (1997) state that “popular education, an indigenous paradigm of non-formal education developed in the region, is facing serious challenges in the context of post-modernism and post-Marxism in Latin America” (p. 1). However, the concept of popular education has a long tradition in many countries of the world. We cannot affirm that it is a Latin American idea. What we can confirm is that in Latin America, since Freire, popular education has developed a transformative socio-political orientation, in which the central part of its methodology is founded on a dialectical vision of knowledge (Mejía, 1996).

developed in the northeastern region of Brazil, in which half of the population was illiterate in 1960. Gadotti (1990) expresses that Freire developed more than a method, but a learning theory and a philosophy of education. Rather than by his philosophy, Freire’s work was known more by his literacy method. The landmark established by Freire’s literacy method was to link the process of learning to read and write with social and political action to transform society. The conscientization process is not for isolated individuals, as explained by Bimbi:

The matrix of the method is education conceived as a moment of the revolutionary transformation process of society. It is a challenge to every pre-revolutionary situation and suggests the creation of humanizing pedagogical acts (not humanistic) that are incorporated into a pedagogy of the revolution. (quoted in Gadotti, 1990, p.37)

Gadotti (1990) outlines Freire’s method of developing critical consciousness in three phases:

1. Research phase: Discovering the vocabulary universe of the learners. In the research process, words and generative themes from learners’ daily life and social group are found.

2. Defining themes phase: Coding and decoding. Generative themes are analyzed in their social context. In this phase, files are prepared for phonetic families, using them as examples for reading and writing.

3. Problematization phase: In this phase, the real living conditions are analyzed going from the concrete to the abstract, and from the abstract to the concrete. The process is directed to discover the need for taking action—cultural, political, and social—to eliminate the obstacles to humanization. (p.35)

The ultimate goal of the method is conscientization. Pedagogy for liberation must convey a transformative praxis. Some scholars dispute the existence of a popular education method (Gadotti, 1990). They insist that what Paulo Freire did was to elaborate a knowledge theory, a philosophy of education, and apply it to literacy education.

Paulo Freire’s educational philosophy has influenced and inspired social movements, in particular, the environmental social movement (Novelli, 2013). Freire developed a model of
education that can be defined as political action for social transformation and is summarized in the first works of Freire in his term “conscientization.” This process of conscientization is carried out in the cultural circles that promote dialogue. The circles are integrated by people learning to read and write through a practice of codification and decodification (Freire, 1997).

Freire (1997) and his co-workers collected experiences of learners’ daily lives to create generative themes. These generative themes are codifications of everyday living experiences that have rich and complex meanings that can produce discussion. The experiences are obtained and presented as problems to the culture circle (Freire, 1997).

Education and literacy are a result of sharing knowledge and revealing the background knowledge of the students through a thorough investigation of their environment and daily life. Even though it is not explicit, there is in Freire’s pedagogy a clear relationship between the environment and the cultural products that result from human experience (Colón-Rivera, 2003). In the literacy method that Freire created, it was implicit that he and his supporters encouraged people to be not only consumers of knowledge but also producers of knowledge.

Cunningham (2000) explains that Freire makes us aware of the fact that education is never neutral and that science alone cannot frame our discourse. Science is only one way to know; to the extent we use science just for promoting a particular approach, then we have distorted the message. It is essential that the educators of adults recognize that knowledge is socially constructed and that it has the potential to be emancipatory or to perpetuate existing power relations. Cunningham (2000) suggests that the concern of Freire with practice was that he held that critical reflection and action were inseparable. She emphasizes that in universities there is a great division between theorizing and the real world in the social sciences.
Freire’s pedagogy asks participants to join in an exchange with the environment and the community. When Freire implemented his idea of problem posing, he invited the community to dialogue with their natural and social environment. By observing and asking what is relevant to their daily lives, they were able to single out essential characteristics of their environment and their culture. They could see themselves as producers of knowledge and culture (Colón-Rivera, 2003).

Freire himself recognized the significant influence of the social and natural environment in his commitment to education for action and liberation. Jorge Jeria (1986), who worked with Freire in Chile, quotes him speaking about his childhood:

At this moment, we have known what is to be hungry. During my childhood, I needed to steal because I was hungry. I needed to kill birds with a sling. I needed to fish. I needed to eat. I learned a lot at that time in spite of my childhood. (p. 10)

Some of these experiences related to his place and surroundings were a determining factor in shaping Freire’s vocation to work with the poor. Jeria (1986) describes some of these episodes in Freire’s childhood: “Based on these experiences, Paulo Freire believed he had understood the problems of the oppressed since childhood” (p. 10).

American Popular Education: Myles Horton

Myles Horton was an American educator and organizer who made significant contributions to the civil rights movement and popular education. Horton initiated the Highlander Folk School on the Cumberland Plateau in Tennessee in 1932. Myles Horton talks with Paulo Freire about social change in the book, *We Make the Road by Walking: Conversations on Education and Social Change.*
Horton elaborates his views on participatory education and social change through anecdotes, storytelling, and conversation. He concurs with Freire that social transformation is attained through popular participation. These conversations show that the essential philosophy of both, as popular educators, is the awareness that theory comes from practice and that knowledge develops through reflection on practice and experience (Horton & Freire, 1990).

Myles Horton’s and Paulo Freire’s philosophies developed through two different practices. Horton’s popular education practice was based in “a small, independent residential education center situated outside the formal schooling system or the state” (Bell, Gaventa & Peters, 1990, p. xxiii).

Paulo Freire’s early practice was in university and state-sponsored programs. Horton’s and Freire’s philosophies came not from theory but their relation to the social environment and their support of popular struggles for participation and freedom (Bell et al., 1990). According to Bell et al. (1990), “Though both are often credited for what they contributed to these movements, perhaps more significant is the way in which their careers were in fact shaped by social movements themselves” (p. xxiii).

Since its inception, Horton established an educational process for developing literacy and empowerment that was founded on participation. Participation is a core ingredient of popular education. However, Horton was implementing an education based on participation well before Freire elaborated his literacy methods in *Education as a Practice of Freedom*. The workshop format lent itself to broaden participation and was extensively used by Horton during the 1950s. Workshops in popular education play a significant role in participatory research and dialogue.

Ghiso (1999) indicates that the concept of the workshop as a popular education tool has been widely discussed in the literature related to pedagogy, popular education, sociocultural
animation, and social work. Horton pioneered the use of the workshop as a tool for participation many years before it was incorporated as a fundamental technique in popular education. Ghiso (1999) tells us that “the workshop is recognized as a valid instrument for socialization, the transfer, the appropriation and the development of knowledge, attitudes, and competencies in a participative manner and relevant to the needs and culture of the participants” (p. 142).

Horton affirms in Horton and Freire (1990) that by the 1950s, some critics could not understand why there was so much dialogue and storytelling in the workshops and theoretical arguing was not evident. Horton tells us in the form of an anecdote how some people criticize Highlander workshops and how he answered those critics:

“All you do is sit there and tell stories.” Well, if he’d seen me in the spring planting my garden, he would’ve said: “that guy doesn’t know how to garden, how to grow vegetables. I didn’t see any vegetables. All I saw was him putting a little seed in the ground. He’s a faker as a gardener because he doesn’t grow anything. All I saw was him, and there’s nothing there”. Well, he was doing the same thing about observing the workshop. It was the seeds ready to start, and he thought that was the whole process. To me, it’s essential that you start where people are. But if you’re going to start where they are, and they don’t change, then there’s no point in starting because you’re not going anywhere. (Horton & Freire, 1990, p. 99)

In his autobiography, (Horton, Kohl & Kohl, 1990), Horton reiterates his view of participatory education and highlights that the educator needs to trust the learner, even if the people you are dealing with may not seem to deserve that trust. He uses the metaphor of having two eyes but using each one differently when doing educational work. Horton describes that with one eye he sees how people perceive themselves by looking at their body language, learning what they like, what troubles them and conversing with them. With the other eye, he visualizes where he would like to see people moving regarding awareness.

Horton et al. (1990) conclude that people should learn from experiences. Horton advocated that students analyze their experiences and keep learning from reflecting on them.
They need to learn by making decisions. In his words: “Popular education should give people experience in making decisions. Many take for granted that people can make decisions, but actually the majority of us are not allowed to make decisions about most of the things that are important” (p. 134).

Horton recognizes as central to the learning experience people's knowledge, which Freire calls organic, “in which the body has much more place than in our way of thinking and of knowing. As progressive teachers and educators, we have to first get the knowledge about how the people know” (Horton & Freire, 1990, p. 98).

Another element in Horton’s approach to popular education is action-reflection, which is an essential part of participative action research. Horton explains:

I can say that theory didn't come out of my head. That came out of action. That came out of interaction, theory, practice, reflection, which you describe so well. That's the result and not the cause. And it's still subject to constant change. As action, I'm enlightened by the things I learn working with people in action. (Horton & Freire, 1990, p. 237)

The program exemplified the inspiration of modeling and teaching by example with the literacy classes being offered at Highlander Center. Horton states:

Sometimes we put fifty people to be trained in how to teach illiterates, and we spend fourteen days speaking about different theories and matters, and the teachers cannot experience it. Then the last day we have a lunch together, and the next day the teachers meet the illiterates and don't know how to work. In this case, Bernice prepared for future educators by teaching in their presence. It's beautiful because she taught through her example. (Horton & Freire, 1990, p. 76)

Motivation regarding popular education comes more from the purpose and goals people want to achieve rather than from methods and techniques to make education more appealing. As Horton explains, that was the case with literacy classes:

That is, the people wanted to write and to read at that time because they knew that they were being prevented from voting because they could not read and write words. Then we can see the coincidence: on the one hand, the people needing, wanting; on the other hand,
you and the team, open to the needs of the people. Because of that, you could start without too much preoccupation concerning methods and techniques and materials because you had the principal ingredient, which was the desire of the people, the political motivation of the people. (Horton & Freire, 1990, pp. 77-78)

**Brief Synopsis of the Concept of Popular Education in Latin America**

The French Revolution not only influenced the American Revolution but resonated in Latin America. Free schools, obligatory for all, is an achievement that motivated Latin American leaders to fight for education for all. This public education would be called popular education. According to Mejía (1990), in the young Latin American republics, this idea was represented by three prominent thinkers: Simón Rodríguez from Venezuela, Domingo Faustino Sarmiento from Argentina, and José Martí from Cuba.

Simón Rodríguez the teacher of the Liberator of South America, Simón Bolívar, published a book titled *La Isla de Robinson* [Robinson’s Island]. In the book, he argues about the nature of education that Latin America should have. Simón Rodríguez talks about forgetting Europe and developing authentic Latin American institutions, not imitations from Europe. He envisions a different America with authentic institutions and ideas (Mejía, 1990).

Mejía (1990), explains that Simón Rodríguez was eloquent about the idea for popular education in Latin America and quotes that vision: “It is necessary a new school with [Latin] American identity, which teaches arts and trades, that shows the children that this continent is different, although it gives him the precious tools to defend himself in life” (p. 13).

The idea of culture in Simón Rodríguez is well developed. He thinks of a creative Latin American school that teaches arts and trades yet is not an imitation of Europe’s educational model (Mejía, 1990). Another thinker, the Argentinean Domingo Faustino Sarmiento, visualizes
Latin American education as a struggle between civilization and barbarism. He struggled for popular education and for the workers’ right to free and public instruction. Though he copied the European model, he advanced the idea of public education (Mejía, 1990).

The third thinker is José Martí. He postulated that the people are the entire nation, and for that reason, everybody should receive a popular education. There is no reason “why the rich get educated, and the poor do not. The problem is to devise an education project that guarantees education for all” (Mejía, 1990).

A brief historical synopsis of the concept of popular education shows a variation of ideas and interpretations. Nevertheless, we can conclude that popular education since its inception in the vocabulary of social struggles has been a demand for the workers and the poor. The evolution of the concept in the last four decades has been pointing to a particular theoretical body of knowledge in some way (Gadotti, 1990). For many years, popular education was associated with adult education. Through this type of education, the intention was that adults would receive the education that traditionally was given to children and that for various reasons the adult could not receive or access. It emphasized primary education and literacy (Mejía, 1996).

In the adult education model, the traditional school curriculum and styles are repeated with adults. This conceptualization of popular education was common in Latin America and the Caribbean until the 1950s. Mejía (1990) maintains that the liberal state in Latin America has utilized four different models of projects intended to be used for popular education:

1. Democratization model: The popular education project underlying this model guarantees that the poor have access to school.

2. Education as a human resource: This model emphasizes technical education and training to allow persons be able to make a living.
3. Education to overcome exclusion: Developed during the 1960s, if people who are excluded from society are integrated into development processes, they will rise above exclusion.

4. Education as computer technology instruction: It emphasizes the development of short technical careers that can be obtained in three or four semesters. (pp. 15-17)

Mejía (1990) explains that by looking at the methods utilized in the above models, a characterization of the philosophical and political goals can be deducted. He points out that even without being aware of it, there is a vision of society behind the methods that integrate an educational proposal:

Then we can say that in the method, the conceptions of what determines us are synthesized and what concrete actions we are going to implement in the educative act. In this sense, everyone inscribes methodologically in a big current that has a conception of the world, of society, of culture, of education. (p. 71)

Gianotten and de Wit (1985) have defined the contemporary characteristics of Latin American adult education. They posit that popular education and participatory research have shaped an adult education paradigm that can be summarized by having the following features:

- It departs from the reality of the participants, its concrete historical situation, promoting their economic and social situation awareness;

- Shows a concern to overcome the invasive and alienating nature of conventional educational programs and cultural modules massively diffused. In contrast, popular culture is valued and deepens the cultural identity;

- It seeks a horizontal pedagogical relationship; it speaks of self-study, self-assessment, and self-management;

- the manner of proceeding is usually group-based, cooperative, communal, organized and democratic;

- education is closely related to action; departs from reality, to reflect on it, return to it and transform it; stimulates an organization that allows the participation of the community and its effective intervention in the process of decision making. (p.66)
Breaking with Orthodox Views of Social Transformation

Traditionally, for the left and Marxist organizations, the category “people” has been interpreted to represent the working class and its allies (Gallardo, 1986). Social movements have put forward a new interpretation of “people.” Gallardo (1986) affirms that the people, the popular field, constitute themselves asymmetries that emerge from social, economic, and political inequality.

To eradicate these inequalities and to be the subjects, not object, of manipulation, all the people who suffer from inequalities should activate, organize, and mobilize to fight oppression (Gallardo, 1986). In this perspective, popular education pursues the conversion of popular sectors in subjects who organize and mobilize to build a society governed by the majority: the people.

In this interpretation, Gallardo (1986) distances himself from the traditional Marxist view of the industrial working class or the proletariat as the social force called to transform society and reach social and economic justice. Instead, Gallardo puts forward an interpretation that calls for the integration of a very diverse and inclusive social movement.

Participatory Action Research (PAR)

Orlando Fals-Borda (1991), one of the influential authors in participatory action research, explains that it is not entirely research oriented or merely adult education or only sociopolitical action. It contains all these characteristics together as part of a conception of the investigation process and may be part of an experiential methodology. PAR entails “the acquisition of serious and reliable knowledge upon which to construct our countervailing power, for the poor,
oppressed and exploited groups and social classes and the grassroots, for their authentic organizations and movements” (p. 3).

Fals-Borda (1991) states that the asymmetric subject-object relationship characterizes traditional academic research. To participate means to break up from your free will with the unequal relationship of submission and dependence inherent in the subject/object relationship. Fals-Borda affirms that “this is the essence of participation” (p. 5).

According to Fals-Borda (1991), participation must be engrained in the history of the communities: “The general concept of authentic participation as defined here is rooted in cultural traditions of the common people and in their real history (not the elitist version)” (p. 5). He affirms that breaking up with the subject-object relationships generates an enormous potential for creativity. This rupture involves the rejection of dogmatisms, authoritarianism, and traditional patterns of exploitation and domination.

Fals-Borda (1991) enumerates four techniques that have resulted from the practice of PAR that enable the development of counteracting people’s power:

1. Collective research. This is the use of information collected and systematized on a group basis as a source of data and objective knowledge of facts resulting from meetings, sociodramas, public assemblies, committees, fact-finding trips and so on.

2. Critical recovery of history. This is an effort to discover selectively, through collective memory, those elements of the past which have proved useful in the defense of the interests of exploited classes and which may be applied in the present struggle to increase conscientization.

3. Valuing and applying folk culture. Account is taken of cultural and ethnic elements frequently ignored in regular political practice, such as art, music, drama, sports, beliefs, myths, story-telling, and other expressions related to human sentiment.

4. Production and diffusion of new knowledge. It recognizes a division of labor within base groups. Although PAR strives to end the monopoly of the written word, it incorporates various styles and procedures for systematizing new data and knowledge
Participatory Action Research in North America

John Gaventa, another leading figure in PAR, offers a perspective on participatory research in North America. Gaventa (1991) views PAR objectives as twofold. It is considered “not only as a means of creating knowledge; it is simultaneously a tool for the education and development of consciousness as well as mobilization for action” (pp. 121-122). Gaventa explains that Paulo Freire had a clear understanding of the connection between research and action for transformation and quotes Freire’s statement: “I have to use methods for investigation which involve the people of the area being studied as researchers. They should take part in the investigation themselves and not serve as the passive objects of the study” (Freire, 1982, p. 30).

In the opinion of Gaventa (1991), PAR is not limited to the Third World. Analogous ideas have been developed in the United States and the First World, frequently initiating from groups that have common characteristics of overruling by the knowledge system. Gaventa (1991) mentions a series of examples in which participatory research may be observed:

1. In areas or by groups where dominant knowledge has been a force for control but in which there is little access to sympathetic expertise. This includes such rural areas as Appalachia and oppressed groups, women, workers, the poor whose interests are not well represented by the knowledge elite-minorities. Lacking the capacity to rely on counter-experts for solutions to their problems, they must both create and struggle to attain knowledge on their own.

2. Conducted by groups concerned with the education of the people…consists of community groups, labor unions, and minorities involved in concrete, grassroots-based action.

3. Growing out of concern for the participation of people in decisions that affect their lives, a theme that has been part of the New Left, civil rights, community organizing and environmental movements of the 1960’s and 1970’s. (p. 123)
Gaventa (1991) states that in North America, three strategies have developed regarding popular participatory research: the reappropriation of knowledge, development of knowledge, and participation in the social production of knowledge. Gaventa (1991) explains that the reappropriation of knowledge can take place through community power structure research. In this case, citizens have learned to investigate their own power structures through obtaining access to courthouse records of transactions that affect communities (Gaventa, 1991).

Another way is through corporate research. A vast amount of information on corporations that affect workers and communities in the United States and abroad are in the hands of federal and state agencies. Some manuals have been written to teach how workers and communities may obtain information (Gaventa, 1991). The right to know has also been raised as a demand of movements by workers, community groups, and professionals who reclaim the public’s right to know the content of toxic chemicals used at work that affect the community (Gaventa, 1991).

Gaventa (1991) tells us that people in some instances realize official knowledge contradicts their own experience. This contradiction, for example, happened in the case of the black lung movement in West Virginia. In this case, doctors eventually confirmed that the miners were right in their suspicion that breathing difficulties came from the mines and not from asthma, which was the official explanation.

In this context, people's experiential knowledge clashed with official knowledge and the interpretation of reality. Against this background, the idea of literacy assumes a new significance. Gaventa (1991) affirms:

On the other hand, when the process of becoming literate is tied to a process of struggle, of gaining knowledge for action, it becomes a far more successful experience, both in the skills that people learn and the consciousness they develop about the society as a whole. (p. 125)
Flexibility and Diversity in the Application of PAR

Through the study of projects in different regions of the world, McIntyre (2008b) concludes that there are not “fixed formulas for designing, practicing, and implementing PAR projects” (p. 2). Likewise, there are no preponderant theoretical frameworks that support PAR practices. There is flexibility in how PAR processes are framed and completed. She points out that there are a variety of practitioners of PAR. Some practitioners are community insiders, and others come from outside the community. Due to this reason, PAR practitioners draw from a diversity of theoretical and ideological viewpoints that inform their practice.

PAR has continued evolving and broadening the field in which this participatory research is applied. McIntyre (2008a) describes three characteristics of participatory action research:

- The active participation of researchers and participants in the co-construction of knowledge; the promotion of self- and critical awareness that leads to individual, collective, and/or social change; and the building of alliances between researchers and participants in the planning, implementation, and dissemination of the research process. (p. ix)

As explained by McIntyre (2008a), several theoretical frameworks influence PAR. Researchers make use of Marx’s position regarding the need for people in the community to reflect on the structural power of ruling classes to fight oppression. Another influence on PAR is the critical theory that suggests researchers pay attention to power in social, political, cultural and economic contexts and how they influence people’s daily lives. She explains that race should be taken into account in research projects since race mediates projects theories and research processes.

McIntyre (2008b) affirms Freire’s concept of conscientization and critical reflection as necessary for individual and social change, and his “commitment to the democratic dialectical
unification of theory and practice have contributed significantly to the field of participatory action research” (p. 3).

McIntyre (2008b) describes her conceptualization of PAR, examining the manners whereby participants take part in collective, action-based projects that reflect their knowledge and mobilize. She stresses that this approach is based on the beliefs of Paulo Freire (2001) and feminist practitioners of PAR. In the opinion of McIntyre, this feminist approach is “characterized by the active participation of researchers and participants in the co-construction of knowledge” (p. 5). In the view of McIntyre, feminism has contributed to PAR with viewpoints that refuse to accept research that ignores and devalues women’s experiences and contributions to social science inquiry.

In McIntyre’s (2008b) conceptualization of PAR, there are three phases: “exploration, reflection, and action” (p. 5). She maintains that customs and beliefs shape a PAR project that considers the desires of the research participants. McIntyre (2008b) explains that beyond those desires, participants choose to act on specific topics that are generated in the PAR process. Eventually, the actions that participants decide to take concerning their existing situations are the result of the questions that arise and are dealt with inside the entire research process.

Youth Participatory Action Research and Popular Education

Cammarota and Fine (2008) highlight the connection between popular education and participatory action research implemented as a participative pedagogy of critical inquiry. They describe its orientation:

PAR follows popular education by focusing the acquisition of knowledge on injustice as well as skills for speaking back and organizing for change. However, the pedagogy is specifically research such that participants conduct a critical scientific inquiry that
includes establishing key research questions and methods to answer them, such as participant observation, qualitative interviews and questionnaires, film, and speak outs. (p. 6)

Cammarota and Fine (2008) researched how PAR is applied to work with young people in East Los Angeles schools and New York City. They call this adaptation of PAR to youth work youth participatory action research (YPAR). They worked to design research that penetrates deeply into local youth politics. In the opinion of Cammarota and Fine (2008), PAR challenges traditional studies in a way by which problems are analyzed through accurate and systematic processes.

Cammarota and Fine (2008) emphasize that another characteristic of PAR is that the knowledge acquired from the research must be critical, implying that discoveries and understandings resulting from analyses ought to “point to historic and contemporary moves of power and toward progressive changes improving social conditions within the situation studied” (p. 6).

Cammarota and Fine (2008) conclude their characterization by saying that PAR knowledge is not passive. They tell us:

Research findings become launching pads for ideas, actions, plans, and strategies to initiate social change. This final difference distinguishes PAR from traditional research by pointing to a critical epistemology that redefines knowledge as action in pursuit of social justice. (p. 6)

Cammarota and Fine (2008) point out that Freire’s concept of praxis-critical reflection and action informs their educational philosophy. Students examine their social environments through research and apply their knowledge to find solutions to their poor living conditions. Through PAR use, students learn how to study problems and find solutions to them. “More
importantly, they study problems and derive solutions to obstacles preventing their own well-being progress” (Cammarota & Fine, 2008, p. 6).
Chapter Summary

This chapter reviewed the concept of learning in connection with learning in social movements. Learning has been studied and analyzed as an individual process and as a social process. Behaviorist and cognitive theories view the process of learning as a lonesome process. On the one hand, behaviorism claims that learning is an observable event in response to elements from the environment, and the outcome of learning is seen as a change of behavior. On the other hand, cognitivism focuses on analyzing the internal mental processes within the mind. Situated learning theory attempts to conciliate the division between behaviorism and cognitivism, proposing that learning comprises relations between a person and a situation. Constructivism theory points out that individuals form or construct a large part of what they learn or understand. In other words, from the constructivist perspective learning is developing meaning from experience.

Researchers in the field of learning in social movements (Choudry & Kapoor, 2013; Foley, 1999, 2004; Hall, 2009) concur that few studies theorize informal learning and social movement learning. Choudry and Kapoor (2013) point out that academic literature on adult education and learning is considerable, yet relatively few attempts have been made to analyze informal learning and knowledge production through participation in social action. This corroboration of the importance of incidental learning suggests that to do those types of analyses, one needs to write case studies of learning in the struggle.

Informal learning includes all learning external to the curriculum of formal education and non-formal education. Shugurenisky (2000) classifies informal learning into three categories: 1) Self-directed learning is a learning project initiated by an individual or group with the goal of
learning something. 2) Incidental learning is a learning experience that takes place when there was no previous intent of learning, but after the experience, the person becomes aware that some learning took place. 3) Socialization is the learning of values and behavioral skills that take place during everyday life, but there is no awareness of the learning.

Social movements are social processes by which social actors participate in collective action to pursue a solution to problems that affect their lives. Social movements produce knowledge about the interactions of people, nature, and society. However social movements are not recognized as producers of knowledge. Participatory research provides people the opportunity to get involved in action and reflection and the construction of knowledge.

The popular education framework developed by Paulo Freire in Latin America consists of a model of education that is summarized by the concept of conscientization. It is the process of developing a critical awareness of one’s social reality through reflection and action. Freire’s critical methodology incorporates the unity of theory and practice. His view of the educational process in which participants investigated the themes for the literacy process has contributed to the field of participatory action research. Participatory research and the popular education framework of Freire have been interconnected since their inception and contribute to understanding processes of learning in social movements.
CHAPTER 3
PUERTO RICO’S ENVIRONMENT AND POLICIES

The interest of the United States in Puerto Rico predates the Spanish-American War. Thomas Jefferson, third president of the United States (1801-1809), believed that the Greater Antilles were meant to gravitate around his nation. Monroe, the fifth president (1871-1825), was concerned that another power could replace Spanish rule of Cuba and Puerto Rico. The development of the United States as an industrialized nation during the nineteenth century increased the need for exporting manufactured goods and acquiring raw materials. This economic need of the expanding nation framed its military enterprises. In 1898, the United States invaded Puerto Rico during the Spanish-American War. Spain renounced sovereignty over Cuba and ceded the Philippines, Puerto Rico, and Guam to the United States through the Paris Treaty (Picó, 2011).

The acquisition of Guam, Puerto Rico, and the Philippines after the war with Spain manifested a change of course in American expansion. Habitually, territories were acquired by the United States to become new states in equality with existing states. Nevertheless, they were acquired as colonies instead of future states. This new policy was affirmed by what is called the Insular Cases. The Supreme Court ruled that full constitutional rights do not inevitably extend to all parts under American control. However, in 1917, Puerto Ricans became American citizens by means of the Jones Act. The Jones Act provided for a direct-vote elected legislature and a bill of
rights and approved the election of a resident commissioner with voice but no vote in Congress (Duany, 2017).

The political situation of Puerto Ricans has ramifications on all orders of life, but they are ingrained in the existence of a nation that does not have the major powers to decide and rule on its most pressing issues. Puerto Rico became an *estado libre asociado* (U.S. commonwealth) in 1952, despite the fact the United States federal government has authority on most aspects of political and economic life. Puerto Rico has no representation in Congress, only a resident commissioner with voice but no right to vote. People living in Puerto Rico cannot vote for the United States president or vice president (Duany, 2017).

The victory of Luis Muñoz Marin and the Popular Democratic Party (PPD) in the elections of 1948 and the 1952 founding of the *estado libre asociado* (U.S. commonwealth) began the transition of a poor agricultural country to an industrialized one. Industrialization was boosted by Operación Manos a la Obra (Operation Bootstrap); it changed the nature of the economy and began to modify the landscape of Puerto Rico. As Pantojas García (2015) declares, “With the support of the metropolis, the PPD attained a major transformation leading Puerto Rico to be more affluent than the countries of Latin America and the Caribbean but poorer than the poorest state in the United States” (para. 4).

Operation Bootstrap was based on cheap labor and tax exemption to attract industries to Puerto Rico. One of the principal tenets of economic development of the Puerto Rican government was to add tax exemptions on top of the exemption from corporate income taxes in the United States. In the opinion of Dietz (1993), the industrialization process relied heavily on tax exemption:
On top of the exemption from U.S. corporate income taxes that was granted to firms operating in Puerto Rico, the Commonwealth government added exemptions to qualifying corporations from the local corporate income tax, the income tax on dividends distributed to individuals, municipal taxes, license fees, and the property tax, and it also provided a variety of subsidies on rent and labor costs... U.S. corporations could completely avoid taxes on their operation in Puerto Rico unless they repatriated profits to the parent corporation. (pp. 300-301)

The proliferation of industries due to the generous policy on tax exemption resulted in the intensification of the pollution of aquatic resources, the deterioration of coastlines, the decline of the coral reefs, and deforestation due to urbanization and the construction of roads. The industries generated problems of atmospheric pollution, and water impacted public health by the increase of respiratory diseases and cancers of various types (“Breve Historia”).

Emergence of the Environmental Social Movement

Several environmentalists trace the emergence of environmental movements in Puerto Rico during the ’50s and ‘60s. The processes of environmental struggles that began in the country include the fight against the exploitation of the mining deposits of copper found in the central-western part of the island and among the municipalities of Lares, Utuado, and Adjuntas. That situation was the prelude to the environmental and community struggles that developed in that region early in those decades up to 1980s. It produced the emergence of Casa Pueblo, an environmental group that led the opposition to the project of open-pit mining in the area. Casa Pueblo had been active in defense of the environment and the natural resources of the region until today (Berman Santana, 1993; “Breve Historia”; García-Martínez, 1984; García-Martínez, García-Ramos & Rivera-Rivera, 2005).

The opposition to a superport project on the island of Mona in 1975 was part of the beginnings of the environmental social movement. This plan projected the use of the island of
Mona, which had been designated as a natural reserve and as a port of transshipment of oil. The plan also included building various storage tanks of petroleum and byproducts, refineries and thermoelectric plants for power generation projects. It aimed to sell energy to Caribbean countries. Other projects contemplated in the plan would include desalination of seawater plants and urban developments. The public and scientists’ opposition to the devastation of the natural reserve stopped the project in the planning stage (“Breve Historia”).

The Federal Environmental Protection Agency (EPA) in the United States, Puerto Rico’s Environmental Quality Board (EQB), and the Department of Natural Resources were organized in the 1970s in response to the rise of these environmental struggles in the United States and Puerto Rico.

The Boom of the Pharmaceutical Industries Under Section 936

Section 936 of the 1976 Federal Tax Reform Act substituted previous exemptions and incentives given to industries established in Puerto Rico. This section allowed U.S. subsidiaries operating in Puerto Rico to send their earnings to the parent company at any time without paying federal corporate tax. The only requirement imposed by the Puerto Rican government was to pay a little “tollgate tax” to the Commonwealth on any dividends when profits were repatriated. The tax maximum was 10% of sent earnings. Nevertheless, it might be reduced to less than 4% if not all profits were returned (Dietz, 1993).

After the enactment of Section 936 in 1976, there was a boom in the establishment of American companies in Puerto Rico, especially pharmaceutical companies. As explained by García-Martínez, García-Ramos and Rivera-Rivera (2005), the pharmaceutical industry grew enormously for three decades, and Puerto Rico became one of the most important centers of
pharmaceutical production in the world. Section 936 of the Internal Revenue Code favored expansion of the pharmaceutical sector. This part of the tax code conceded parent corporations the ability to repatriate nearly all exempt earnings from affiliates in Puerto Rico to the United States (García-Martínez et al., 2005).

The pharmaceutical and chemical companies were well known for the deficient dumping of hazardous waste in the island during the late 1960s and mid-1970s. Disposal took place in inadequately built lagoons, in sinkholes, in channels and rivers, and in landfills that were not safe for the disposal of toxic and dangerous waste. Companies that manufactured electronic parts were also a source of soil and water contamination during that time. From the 1970s to 1980s, solvents and heavy metals were found in landfills, wells, and surface water in northern, southern, and southeastern Puerto Rico. The origin of these contaminants was traced to the industries mentioned above, as well as to thermometer producers, oil refineries, and petrochemical plants (Torres-González & Wolansky, 1984).

With the approval of Section 936 of the Federal Internal Revenue Code, many industries were established in Cidra. Over 15 industries were operating with many incentives and tax exemptions. Many of them settled on the shores of Cidra Lake and discharged effluents from industrial processes in this body of water. These industries also deposited hazardous and toxic waste in the landfill of the Cidra municipality. The continuous deposit of industrial waste generated severe contamination problems. The leachates generated in the landfill reached a creek running through a ravine where the landfill was located (Hunter & Arbona, 1995). The creek, which the neighbors called Quebrada Monasterio, flows into the La Plata River. Downstream from the point of discharge, a pumping station was installed through which water from the La Plata River was sent to Lake Cidra through an extensive pipeline. In this way, pollution doubled:
through direct discharges from the industries on the shores of Cidra Lake and from the recirculation of contaminants being deposited by industries in the landfill (Colón-Rivera, 1990).

The point where the pipes discharged the contaminated waters from the La Plata River into Lake Cidra was located near Parcelas Gándaras II. A tributary of the Lake, the Sabana River dragged the pollutants coming from the landfill and Vista Monte community wastewater treatment plant. Precisely in that area, hundreds of fish died. The main feature of the fish kills in that area of the lake was that all had bleeding ulcers in the head and convulsed to death. The fish kills occurred with greater intensity between 1989 and 1992.

Figure 4. “Humberto Lleras (decd.) shows a catfish from Cidra Lake with ulcers in the head where at this moment there is dangerous contamination of fish, and therefore the mortality [of fish] has increased.” “Alarma mortandad de peces” [Alarming Fish Kills]. (1991, June). La Semana [Caguas].
The summer of 1991 was recorded as the season with the most significant number of fish kills with bleeding ulcers in the head. These fish kills took place near the Parcelas Gándaras II community near Cidra Lake. The Despertar Cidreño Committee and Humberto Lleras1 took samples of water, sediment, and livers of dead fish and sent these samples to the National Toxics Campaign Fund laboratory; the results were alarming. The samples tested showed levels of selenium 70 times more than Puerto Rico’s water quality standards. Other dangerous and toxic metals were found in the water samples such as chrome cobalt, selenium, mercury, and zinc. The presence of these contaminants in the samples taken in that area showed that pollutants from the Cidra landfill had migrated to the lake. The severity of the landfill’s contamination made it a candidate for the Super Fund List of the Environmental Protection Agency (EPA) since 1986 (Colón-Rivera, 1990).

Through protests and news media coverage, the communities and Despertar Cidreño were able to expose the grave contamination of Lake Cidra. The chairman of the Environmental Quality Board (EQB) denied the pollution and said publicly that all industrial discharges into Lake Cidra were legal and that contamination with toxic metals from the Lake was not related to the fish kills. The press widely reported the debate between the Despertar Cidreño Committee and the EQB. However, EQB employees recognized in their reports that they could not produce additional sampling due to lack of staff and financial resources.

1Humberto Lleras, now deceased, was a fisherman who lived in Parcelas Gándara II. He contacted Despertar Cidreño regarding the fish kills and become involved in the struggle to clean Cidra Lake.
Laxness in Environmental Regulations

These actions were learning experiences and made people think about the laxness of environmental agencies in Puerto Rico. In discussions between people in the community and affiliates of the group, it was a common understanding that in many instances filing complaints before the regulatory agencies was an uphill battle. That is one of the reasons why the environmental movement in Cidra had to mobilize persistently and take action through numerous protests to pressure government agencies to act and control the contamination occurring in Cidra. The laxness in environmental inspections and regulations on the operations of big corporations have been interpreted as an unwritten exemption for establishing industries in Puerto Rico.

Concepcion (1988) suggests that the easing of environmental rules and inspections for the demands of the industrialization process in Puerto Rico is a form of subordination. Soon after the establishment of the environmental policy and environmental laws in 1971, Puerto Rico’s government initiated a path in the direction of weakening the environmental controls. The strategy of agencies on the island that oversee compliance with environmental controls leans towards the weakening of the rules to accommodate the needs of the industrialization process (Concepción, 1988). She emphasize:

It can be said that, in seventeen years of environmental regulation, Puerto Rico has undergone three stages that indicate a growing tolerance: (1) laxness to enforce environmental regulations; (2) change in quality standards, increasing the allowable levels of pollution; and (3) the use of alternative legal schemes to facilitate the establishment and operation of the industries (for example, to allow changes in the definition of projects).

The indulgence illustrates the seriousness of the problem of pollution, caused by the type of industries located on the island and in making them comply with the regulations and environmental controls. Pollution is a severe and persistent problem despite strict environmental regulations. (p. 127)
The severe contamination problems in Cidra, the contamination of the municipal landfill, and the contamination of Cidra Lake support the statements mentioned above. It was a governmental policy to turn a blind eye to the continuous violations of laws and regulations and was a detriment to the people of Cidra. The policy contributed to the environmental contamination in Cidra.

By direct experience, many residents of Cidra knew of the mess created by the toxic waste in Cidra’s landfill. On August 1986, residents and members of Despertar Cidreño took photographs of employees from a paint manufacturing plant in Cidra discarding liquid toxic waste in the landfill, although the disposal of liquid waste was against environmental regulations. The community consequently filed a complaint with the Environmental Quality Board; no action ever was taken against the paint manufacturing plant. These companies repeatedly discarded toxic and dangerous wastes in the landfill in violation of environmental regulations and with complete impunity.

The 1980s and 1990s were years of intense community struggles against the establishment of these industries and the concession of permits to allow them to release industrial wastes into rivers, landfills, and wastewater treatment plants. Different groups initiated lawsuits demanding the clean-up of wells, landfills, and land to protect the health of those affected (García-Martínez et al., 2005).

From the mid-1980s to 1990s, the Puerto Rican government reoriented its emphasis on industrialization, and it refocused its attention to tourism development. This new orientation of the economic policy sparked new environmental conflicts regarding coastal-area development. The struggle for the Northeast Ecological Corridor (NEC) preserve illustrates the conflict between the investors’ interests of developing a hotel complex on the northeastern coast and the defenders of coastal resources. Additionally, in Vieques, and throughout Puerto Rico and the Caribbean, coastal real estate companies were inviting luxury home buyers and developers to establish in the island (Baver, 2012).
Vieques: A Milestone in the Environmental Struggle

The U.S. Navy closed its live-fire training ground on the Puerto Rican island of Vieques in May 2003. The base shutdown signaled the victory of a grassroots movement against the world's most powerful military. From World War II, the Navy kept a major training installation on this 51-square-mile island, six miles from Fajardo, Puerto Rico. Its departure came after four years of mobilization, hundreds of arrests for civil disobedience, and worldwide media attention to the struggle of stopping the bombing practices. Vieques was the number one site of the Navy military installations in this hemisphere. Ten thousand citizens lived crammed between an ammunition storage site and the training field. The intensity of armaments testing and military exercises created environmental contamination and multiple illnesses among the Vieques population (McCaffrey & Baver, 2006).

The protests and mobilizations were ignited by the accidental death of David Sanes, a civilian security employee on April 19, 1999, during a routine training mission. Two Navy jets missed their target by a mile and a half. Days after Sanes's death, protesters occupied the bombing ranges stopping military training. Activists built several camps in the target zone. Supporters from Vieques, Puerto Rico, and the United States went to the camps to show their support. The support of Puerto Ricans on the island as well as in the United States and international allies helped to generate a significant movement that in the end compelled the Navy to give up what they called their crown jewel in training facilities (McCaffrey & Baver, 2006).

Several members and sympathizers of Despertar Cidreño participated in the civil disobedience activities in the Navy’s shooting range and helped end years of environmental contamination. Don Leo, Davico, and Father Juan expressed in the interviews for this study the
valuable lessons learned in building alliances with atheists in the ecological, social, and political struggles.

936 Companies Left a Contamination Trail in Cidra

Four public drinking water supply wells in Cidra were closed due to the presence of volatile organic compounds (VOC) contamination in the groundwater: two in 1996, one in 1999, and one in 2000. The contaminants tetrachloroethene (PCE), 1,1-dichloroethene (1,1-DCE), and trichloroethene (TCE) were detected in these wells. In January and February 2003, the Environmental Protection Agency (EPA) investigated 12 facilities located in Cidra to determine if they could be potential sources of the groundwater contamination in the area (EPA, 2014). The inspected plants were:

1. IDC
2. Shellfoam Products (Shellfoam)
3. SmithKlein Beecham Pharmaceuticals, Inc.
4. TechGroup de Puerto Rico, Inc. (TGP)
5. Zenith Laboratories Caribe, Inc. (which later came to be operated by IVAX)
6. Pharmaceuticals Caribe, Inc. (IVAX)
7. Excellent Laundry
8. Creative Medical Corporation
9. CMM Laundry
10. Cidra Metallic Caskets (CMT)
11. Ramallo
12. CCL Label de Puerto Rico (CCL Label)
13. Caribbean Manufacturing Company (CMC)

In December 2003, the EPA prepared a Hazard Ranking System (HRS) Report to document the results of its investigations and decided to include the site on the National Priorities List (NPL). The HRS Report identified the site’s location, the known or suspected releases of hazardous substances that resulted in the groundwater contamination, its proximity to nearby drinking water sources, and the populations served by those drinking water sources. Due
to the levels of hazardous substances found in the groundwater as well as potential population exposed to the groundwater, the EPA added the site to the NPL on July 22, 2004.

As explained by the EPA in 2013 the organization prepared a proposed plan to clean up the site and make it available to the public in November 2014. By chance, just a few days before the public meeting to discuss the plan, no one in the environmental movement and sympathizers knew that the meeting was going to take place. Fortunately, a food truck owner who was a sympathizer of Despertar Cidreño found out about the meeting and spread the news around town.

Supposedly, the public meeting’s objective was to provide the community an opportunity to ask questions or give comments on the cleanup alternatives. During the meeting, the members and sympathizers of Despertar Cidreño vigorously questioned the slowness with which environmental agencies attended to the problem and consequently allowed the people and the workers of Ramallo to be exposed to these dangerous pollutants. However, the EPA (2014) stated that “no substantive comments were received during the public meeting (p. 4).”

Eventually, the cleanup of the site was completed in 2016.

Figure 6. Cidra groundwater contamination site. Photo by Eliezer Colón-Rivera, August 30, 2016.
Shift in Puerto Rico’s Economic Model

In the opinion of García-Martinez et al. (2005), since the 1980s there has been a marked change in the Puerto Rican economy from industrialization toward the areas of banking, finance, insurance, large commercial centers, communication, education, tourism, and physical infrastructure construction. The end of Section 936 in 2006 reiterated in government economic planners the emphasis on tourism as a pillar of Puerto Rico’s economic development.

The closure of many industries that were discharging pollutants has somewhat signified a relief for the environment giving a chance for ecosystems to begin a process of natural restoration. In the case of Cidra, the closure of the landfill and the end of operations of several pharmaceutical industries have improved the environment in Cidra Lake.

Somehow the decline of 936 corporations and the struggle of the Puerto Rican environmental social movement have contributed to the reduction of environmental pollution and restoration of natural ecosystems. Moreover, the impulse to tourism as one of the pillars of the economic development model in Puerto Rico is promoting conflicts in scenic areas of natural beauty where investors want to establish hotels and tourist attractions.

Currently, there are ongoing environmental struggles in Puerto Rico by Comité Amigos del Mar (Friends of the Sea Committee) against the building of an extension to a hotel in the area of Isla Verde Beach. In Aguadilla, the community is fighting against the construction of a hotel in the natural coastal area of Playuela. Cayey Para el Mundo (Cayey for the World) is waging a struggle to prevent the building of a shopping center and casino in an agricultural area.

In Ponce, the Committee Friends of the Trees (COAMAR), a group of environmentalists and citizens since 2011, have engaged in an intense struggle for the defense of an urban forest
that they have named El Samán. The pharmaceutical company Walgreens plans to build its eighth store in the municipality of Ponce. The COAMAR has made numerous demonstrations to denounce the environmental impact the store will have (Caro Torrado, 2014).

In the south of Puerto Rico, the community of Peñuelas has organized the Camp Against Coal Ashes to stop an AES co-generation plant from depositing coal ashes in Peñuelas Valley Landfill, which is operated by the company EC Waste Landfill. Since November 2016, the camp intensified civil disobedience and blocked the entrance of trucks transporting ashes that resulted in more than 60 people arrested. The Peñuelas community already had the petrochemical complex known as CORCO, which left them with thousands of acres of land affected. The petrochemical complex was closed, and the company left several abandoned illegal landfills that were used for depositing chemical wastes, damaging soils (Rivera Grau, 2012).

In Cidra, the Despertar Cidreño Committee has developed an intense fight against the construction of a lookout point and boardwalk promenade, for which an area of forest on the shores of the Cidra Lake, the habitat of the paloma sabanera, was deforested especially camasey trees (Miconia racemosa) from which the bird feeds. Mayor Javier Carrasquillo was building this project without the required permits or any environmental evaluation and assessment as required by law. The Despertar Cidreño Committee filed a formal complaint with the Environmental Quality Board (EQB); the construction was inspected, and many violations of regulations were found. The project’s construction was halted in November 2015. Almost a year later, the EQB issued an administrative order requiring the municipality to comply with environmental laws and regulations and imposed a fine of $25,000 against the Mayor of Cidra (Environmental Quality Board, 2016).
At the same time, the Government of Puerto Rico has presented a bill that reforms the Puerto Rico construction permits law instigated by the Fiscal Control Board (FCB). It aims to accelerate the granting of building permits and weaken the processes of environmental evaluation limiting the participation of the community in decision-making processes. These proposed changes pose new challenges to the environmental social movement. Furthermore, Puerto Rico is subject to the federal laws regarding environmental issues. The new administration of EPA, under President Donald Trump’s guidance, has declared that they plan to weaken or eliminate regulations and has begun to diminish its monitoring and enforcement powers (Tillett, 2017).

The Fiscal Control Board (FCB)

On June 9, 2016, in *Puerto Rico v. Sanchez-Valle*, the United States Supreme Court (SCOTUS) confirmed that Puerto Rico is a territorial possession of the United States, with no political or juridical sovereignty of any kind. What SCOTUS did was to reiterate what has been the practice in the country since the American invasion in 1898 (Denis, 2017).

Also in June 2016, the United States House of Representatives enacted the Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA) to establish a fiscal control board (FCB) authorized to manage the Puerto Rican fiscal and economic processes (Denis, 2017).

A Puerto Rican federal judge, Juan R. Toruella, has called PROMESA a colonial imposition and urged residents to disobey the law. According to Román (2016), the judge expressed:
PROMESA represents the most demeaning, undemocratic and colonial act you have ever seen, in addition, to be a coup for democracy in Puerto Rico... I would suggest organizing a movement of civil resistance.

This was the opening of the speech by federal Judge Juan R. Torruella, who used his speech at the 176th Assembly of the Puerto Rico Bar Association (CAPR) to talk about "the crossroads" in which Puerto Rico is located, dividing the "problem" in the aspects “of legal nature "and "economic nature" and adding that the general election next November "should be eliminated” for being “irrelevant", due to the arrival of a Fiscal Control Board under the Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA, for its acronym in English). (para. 2)

The FCB oversees all of the financial operations of the Puerto Rican government; its goal is to make sure that a substantial amount of the public debt is paid to the banks and bondholders. Denis (2017) summarizes the role of the FCB in Puerto Rico:

The Financial Control Board is now the de facto government, banker, judge, jury, and executioner of Puerto Rico. It will supervise and approve the entire Commonwealth budget; reduce or eliminate public pensions; restructure the public workforce (meaning, fire government employees); preside over all leases, union contracts, and collective bargaining agreements; and ensure the payment of debt obligations. (para. 23)

The FCB has asked the recently elected Governor Ricardo Roselló to make cuts of three billion dollars in the annual budget of the commonwealth. On March 1, 2017, Roselló submitted his fiscal plan to the FCB, which included an increase in the property tax, elimination of subsidies to the municipalities, and an increase of car registration stickers, automobile accident insurance, and traffic fines between 5 and 10%. Change in the coverage of MiSalud health insurance and an increase in the prices of certificates and administrative fees were also part of the plan. Finally, a reduction in the benefits and salaries of public employees and cutbacks to retired employee pensions were proposed. The plan also contemplates the closure of about 300 public schools (González, 2017).

According to Denis (2017), these cuts will still not be sufficient, so he contends:

The debt service alone on the island’s $72 billion debt will be near $6 billion annually: $4 billion on its general obligation bonds and $1.81 billion for the electric power
authority and the aqueduct and sewer authority. With a population of more than 3.4 million, this means that every man, woman, and child in Puerto Rico will be paying more than $1,500 per year just to cover the interest on Puerto Rico’s public debt. Since per capita income barely exceeds $15,000, this would represent 10 percent of everyone’s personal income. (para. 28)

According to Stiglitz and Guzmán (2017), PROMESA is a problem rather than a solution. The FCB announced its demands for the new fiscal year that comprised a reduction of three billion dollars in the annual budget. The FCB puts the well-being of the island’s creditors as the number one priority. Capriciously, it outlines a minimum that must be paid to creditors in the short term. It obligates the government to do whatever it takes to achieve that objective, despite the fact that it will ruin the local economy.

Stiglitz and Guzmán (2017) make a dire prediction of the future of Puerto Rico. They explain the consequences of the so-called solution and say:

Indeed, the plan all but guarantees a social as well as an economic catastrophe, owing to substantial cuts in pensions, education, and health spending. The PROMESA board was supposed to chart a path to recovery; its plan makes a recovery a virtual impossibility. If the Board’s plan is adopted, Puerto Rico’s people will experience untold suffering. And to what end? The crisis will not be resolved. On the contrary, the debt position will become even more unsustainable. (para. 14)

The challenges for the environmental social movements at this historic moment are complex and demanding. However, at the same time, these obstacles give social movements the opportunity to disseminate their learning and gain new energies to transform society.

Reductions in Puerto Rico’s government budget ordered by the FCB have had dire consequences for the essential services that Puerto Rican people need. Among other actions, the cuts include the suspension and eventual elimination of the Christmas bonus for public employees, reduction of the working hours for public employees by four days less a month and teachers two days less per month, and a progressive reduction in payment of pensions by 10% by 2020 (Félix, 2017).
Among the cuts stands out the reduction of 300 million dollars to the University of Puerto Rico, which deals a severe blow to public education in the country. The disempowerment of public education will have enormous social and economic consequences. The threat of the cuts caused a strike by university students that extended from February 2017 until May 2017 (Robles, 2017). Also, cuts to medical services, salaries, and pensions led the labor movement and various organizations to carry out a national strike that mobilized about 50,000 workers. The strike paralyzed significant areas of economic activity in the country and ended with the breaking of glass windows in some of the most important banks of Puerto Rico (Coto, 2017).

The government sought the protection of the federal court in May 2017 and argued that the country may be unable to provide essential services to its citizens because bondholders require repayment of about 3,500 million dollars a year. The total debt of Puerto Rico includes nearly 74 billion of bond debt and almost 49 billion of pension obligations (Williams Walsh, 2017).

Hurricane María Aftermath

Five days after hurricane Maria hit Puerto Rico, NBC news reporter Adam Jeffery (2017) described the following panorama of the island:

Hurricane María’s catastrophic impact on Puerto Rico has left the island completely crippled and without power as residents struggle to pick up the pieces. The majority of homes, roads and vegetation across the island have been either severely damaged or completely destroyed, creating a potential humanitarian crisis.

On Friday, the Guajataca Dam began to fail, raising fears of flash flooding and leading to the evacuation of thousands from the nearby towns of Isabela and Quebradillas.

Residents continue to sort through the wreckage of their property to try and salvage anything they can. Authorities now face the arduous task of clearing roads, restoring power lines and providing shelter and aid to those who have lost everything on an island that has already been struggling economically.
This was the worst hurricane to hit Puerto Rico in over 80 years, and it has devastated the entire island. The impact of the storm will be felt for months if not years. (para 1-4)

Five weeks after Hurricane María made landfall, the situation in Puerto Rico is still very ominous. Only 18% of customers have electricity, 73% have access to drinking water, and the economic activity has plunged, sending thousands of workers to unemployment (Jeffery, 2017). The lack of electricity impacts all the essential services negatively, including hospitals, food providers, communications, education, and banking.

The crisis is real and causing much suffering to people, especially the elderly and the children, and there is a public clamor for the restoration of essential public services like electricity, drinking water, and healthcare. However, avid entrepreneurs and followers of neoliberalism² are exploiting the crisis to take advantage of the public outcry to advance their privatization and conservative agendas to earn enormous amounts of money. Just recently the Washington Post denounced the granting of a $300-million contract to a Montana-based company called Whitefish that had only two full-time employees on the day Hurricane María made landfall (Mufson, Gillum, Davis & Hernández, 2017).

According to Mufson et al. (2017), the contract offers an hourly salary of $330.00 for a site supervisor and $227.88 for a lineman. The cost for subcontractors, which are most of the

²Neoliberalism is a political, social and economic agenda that is promoted as orthodoxy by the International Monetary Fund (IMF), World Bank, World Trade Organization (WTO) and the multilateral agreements administered by the last. Some governments, like those of Britain, the USA and the European Union – in accordance with the terms of the Maastricht Treaty – support this agenda; as do international banks, multinational corporations and the media. The central neoliberal tenet is that markets are inherently efficient and that the state and public sector have no essential role to play in economic development apart from facilitating the expansion, intensification and primacy of market relations. Policies that are designed to allow businesses to operate as freely as possible and reduce the economic functions of the state form the core of neoliberalism (Lowes, 2006, p.170).
Whitefish’s workforce, “is $462 per hour for a supervisor and $319.04 for a lineman. Whitefish also charges nightly accommodation fees of $332 per worker and almost $80 a day for food” (para.20). In contrast, a Puerto Rican lineman earns $21 an hour.

After being criticized by members of Congress and the Federal Emergency Management Agency, the governor of Puerto Rico decided on October 30, 2017, to cancel the contract with Whitefish to reconstruct part of the island’s electrical grid destroyed by Hurricane Maria.

Naomi Klein analyzes this phenomenon in her book, *The Shock Doctrine: The Rise of Disaster Capitalism* (2011), as well as the strategies to advance the philosophy and economic interest of private corporations after disasters:

As I dug deeper into the history of how this market model had swept the globe, however, I discovered that the idea of exploiting crisis and disaster has been the modus operandi of Milton Friedman’s movement from the very beginning—this fundamentalist form of capitalism has always needed disasters to advance. It was certainly the case that the facilitating disasters were getting bigger and more shocking, but what was happening in Iraq and New Orleans was not a new, post-September 11 invention. Rather, these bold experiments in crisis exploitation were the culmination of three decades of strict adherence to the shock doctrine. (p. 10)

Klein (2011) explains how in Iraq, Sri Lanka, and New Orleans the procedure misleadingly named “reconstruction” was used to advance corporate profiteering after disasters:

Initiated with concluding the work started with the original disaster by erasing what was left of the public sphere and rooted communities, then quickly moving to replace them with a kind of corporate New Jerusalem—all before the victims of war or natural disaster were able to regroup and stake their claims to what was theirs. (p. 10)

The script of the shock doctrine appears to be getting implemented in Puerto Rico since the aftermath of Hurricane María. Even though the magnitude of the disaster is overwhelming and the corporate investors are moving to profit from the hardships of the people, there is hope in the response at the community level to reconstruct and rebuild the country. The Puerto Rican diaspora in the mainland has been very active in organizing relief efforts (Yeampierre & Klein,
2017, para.3). After the hurricane, neighbors in their communities started cleaning, opening roads, and rescuing people in inundated areas. It is common to observe communities in which soup kitchens have been organized to provide hot meals. Diverse organizations like trade unions, churches, political movements and nonprofit organizations have coordinated various relief efforts.

The response to the disaster from the federal government has been slow according to Puerto Ricans and humanitarian organizations. An Oxfam spokesperson pointed out, “Oxfam rarely responds to humanitarian emergencies in the U.S. and other wealthy countries, but as the situation in Puerto Rico worsens and the federal government's response continues to falter, we have decided to step in” (Sanders, 2017, para.3).

Still, 41 days after Hurricane Maria made landfall in Puerto Rico, 70% of the population does not have electricity (Gomez & Jervis, 2017). The official number of people who have died as a result of the hurricane is 51, but CNN reporter John D. Sutter (2017) disagrees. The reporter visited the funeral homes in 78 municipalities and interviewed funeral home directors and hospital directors. By his account, the number of deaths related to the hurricane is much larger. Sutter (2017) explains that according to Professor John Mutter from Columbia University, who studied deaths following Hurricane Katrina, told him:

He would have expected the death toll in Puerto Rico to be in the hundreds -- in part because of the level of poverty on the island, and also because so few people would have been able to evacuate, as they did for Hurricane Irma in Florida.

The death toll is important, he said, because it influences how much money people donate toward disaster relief and it also affects how governments respond. (pars. 76-77)

The reality that the people of Puerto Rico face is complex and challenging. Puerto Ricans are fronting the crisis of public debt and the devastation caused by Hurricane Maria. The United
States government's response has been inadequate given the seriousness of the crisis. They reflect the colonial nature that characterizes the relation of political subordination of Puerto Rico to the United States (Anderson, 2017). Social movements in Puerto Rico need to deal with these enormous challenges of present historical circumstances. Nevertheless, the crisis offers the opportunity to Puerto Rican social movements to strengthen the connection with the people and forge a new model of society akin to its Caribbean nature.

Chapter Summary

Puerto Rico lacks the essential powers to decide and rule on its most pressing issues. Puerto Rico became an estado libre asociado (U.S. commonwealth) in 1952 despite the fact the United States federal government has authority on most aspects of political and economic life. Puerto Rico has no representation in Congress, only a resident commissioner with voice but no right to vote. Since 1952 Puerto Rico attained a major transformation from a poor agricultural country to an industrialized nation. This change was based on cheap labor and tax exemption.

The proliferation of industries due to tax exemption intensified the pollution of aquatic resources, deterioration of the coast and coral reefs, and deforestation. Public health was affected by atmospheric contamination that led to an increase in respiratory diseases. The environmental social movement in Puerto Rico emerged in the 1960s during the fight against the exploitation of the mining deposits of copper in the central-western part of the island.

Since 1976, with the approval of Section 936 of the Federal Tax Reform Act that allowed U.S. subsidiaries that operate in Puerto Rico not to pay federal corporate tax, a boom in the establishment of American companies, especially pharmaceuticals, took place. The pharmaceutical and chemical companies were well known for the contamination of soil, water,
and air with hazardous and toxic waste. The laxness in environmental inspections and regulations constituted an unwritten exemption for industries to establish in Puerto Rico.

In Cidra, Puerto Rico, pharmaceutical and manufacturing plants deposited dangerous and toxic waste in the municipal landfill that not only contaminated the soil but reached Cidra Lake, a drinking water supply for Cidra and areas of the metropolitan area of San Juan. Communities and people organized the Despertar Cidreno Committee to lead an intense fight against the pollution of Cidra Lake and contamination in Cidra-based communities.

Since the elimination of Section 936 in 2006, the closing of many industries that were polluting the environment has somewhat created conditions for restoration of the environment. The economic crisis has driven the government to reorient economic development toward the areas of tourism, large commercial centers, and infrastructure. These changes have shifted the environmental struggle to the conservation and defense of natural areas, coastal resources, and forests.

The government sought the protection of the federal court in May 2017, arguing that they may be unable to provide essential services to its citizens because bond-holders require repayment of about 3,500 million dollars per year.
A qualitative research approach informs this research. One of the goals of qualitative research is to understand and explain participant meaning (Patton, 2002). Creswell (2013) defines qualitative research as “an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem” (p.15).

Merriam (2009) expands on the purpose of qualitative research: “Qualitative researchers are interested in understanding the meaning people have constructed; that is, how people make sense of their world and the experiences they have in the world” (p. 13).

Qualitative methods enable the study of issues in detail (Patton, 2002). The data collected in qualitative research comprises “quotations, observations, and excerpts from documents (Patton, 2002, p. 47). It takes the reader into the moment of the observation so that the reader knows what it was like as witnesses of the observation. The data obtained from the participants of the study communicate “someone else’s experience of the world in his or her own words. Qualitative data tells a story” (Patton, 2002, p. 48).

Ethnography is about telling a trustworthy and genuine story and gives voice to people in their local environment (Fetterman, 2010). As a research method, it usually relies “on verbatim quotations and a ‘thick’ description of events” (Fetterman, 2010, p. 1), and the result is typically a written text (Fetterman, 2010). According to Creswell (2013), ethnography “focuses on an entire culture-sharing group” (p. 90). This cultural group could be small or large, comprising a
group of people who interact over time. Creswell (2013) points out that ethnography is a qualitative design in which the researcher portrays patterns of ideals, activities, views, and language of a group.

Autoethnography

The specific method of research used in this dissertation was autoethnography. Ngunjiri, Hernandez, and Chang (2010) include a definition of autoethnography that combines three elements: ethnography, biography, and self-analysis. The authors further explain autoethnography as follows:

Autoethnography is a qualitative research method that utilizes data about self and its context to gain an understanding of the connectivity between self and others within the same context. This research method is distinctive from others in three ways: it is qualitative, self-focused, and context-conscious. (p. 1)

Ellis and Bochner (2003) state that autoethnography is a research method that encompasses a personal narrative of the lived experiences of the researcher.

As said by Holman Jones, Adams, and Ellis (2013), the purposes of autoethnography make it a distinctive and persuasive method:

They include (1) disrupting norms of research practice and representation; (2) working from insider knowledge; (3) maneuvering through pain, confusion, anger, and uncertainty and making life better, (4) breaking silence/(re)claiming voice and "writing to right" (Bolen, 2012); and (5) making work accessible. (p. 32)

The autoethnography method defies established ways of doing research and representing others and views research as a political, socially just and socially conscious act. A researcher employs principles of autobiography and ethnography to do and write autoethnography (Ellis, Adams & Bochner, 2011), and autoethnography itself now includes groups and communities
observing themselves rather than just the individual researcher reflecting on her or his emotional life.

I identify with this new development of autoethnography because it brings to the academic debate the perspective of the community and participants in the study. Autoethnography seems to be moving from considering participants as objects to subjects of research. It is up to researchers to make progress from an individualistic psychological perspective of research to a communal social action-oriented research that can give a voice to those without a voice. Although autoethnography in the past has focused on the individual perceptions of reality, it can be open to personal and collective stories in social movements.

One of the advantages of autoethnography is that it allows various ways of gathering data. The experience and participation in Comité Despertar Cidreño have enabled me to collect a variety of data on the environmental social movement in Cidra, Puerto Rico. This vantage point gives me a comprehensive perspective as participant and leader in this movement. The process is continuing because Comité Despertar Cidreño is active at present. The range of possibilities for collecting data is ample.

Because autoethnography emphasizes the self, it is susceptible to some challenging ethical considerations of the method (Ellis, 2007, cited in Méndez, 2013). In autoethnography, information is given about researchers’ lives that could reveal private data of people who interact with the author. The autoethnographer needs to be careful when considering how information about close relatives is disclosed (Méndez, 2013).

Do we need to request consent from the people mentioned in autoethnographic narratives? Unfortunately, the field does not provide responses to the ethical questions that could appear when doing autoethnography (Méndez, 2013). Still, Méndez (2013) suggests that we use
the guiding principle of “doing no harm” in the absence of “universal principles or definitive rules” (p. 283).

Autoethnographic Tools

Davis and Ellis (2008) explain that interactive focus groups are tools that allow researchers to equalize the hegemonic power relationship among traditional research participants and the researchers. It takes place in a collaborative, dialogic process that involves all those participating in the research process. Through interactive focus groups, information is gathered from shared knowledge created in the group. Davis and Ellis (2008) assert:

Interactive focus groups allow us to further equalize the hegemonic power relationship between traditional research participants and ourselves as researchers through a collaborative, dialogic process that makes us all coparticipants in the research process. (p.299)

Chang (2013) explains that autoethnographic data can be collected in a variety of ways: “Recalling, collecting artifacts and documents, interviewing others, analyzing self, observing self, and reflecting on issues pertaining to the topic” (p. 113).

Data Collection

Fetterman (2010) discusses a series of methods and techniques that are part of the tools that the ethnographer uses in research and describes the ethnographer as a “human instrument” (p. 33). Fieldwork is a distinctive characteristic of research for the ethnographer. The method consists primarily of working with people for extended periods of time (Fetterman, 2010). Selection and sampling refer to the approaches of who and what to study. Entry is explained by Fetterman (2010) as the way to get access to the group or community.
Participant observation is crucial for ethnographic research and effective fieldwork (Fetterman, 2010). According to Fetterman (2010), it integrates participation in the lives of the people in the research with keeping a professional distance that permits suitable observation and data collection.

Interviews are the primary data collecting technique of the ethnographer and explain and place in greater perspective what the ethnographer perceives and experiences (Fetterman, 2010). There are two fundamental types of interviews: informal interviews and structured interviews. Other instruments are life histories and autobiographical interviews. Fetterman (2010) emphasizes that “with observation and interviewing, taking life histories allows the ethnographer to assemble a massive amount of perceptual data with which to generate and answer basic cultural questions about the social group” (p. 53).

Additional instruments are the use of projective techniques that are used to elicit cultural and emotional information from members (Fetterman, 2010). Most ethnographic methods are interactive since they are used with people. Fetterman (2010) recommends that the ethnographer remain inconspicuous to minimize the effect on participants’ behavior. He states that data collection essentially depends on human interaction.

For the interviews and focus group, a semi-structured interview guide was used. Eleven individual interviews were conducted. Five of the eleven interviews were carried out with active members of Comité Despertar Cidreño and six interviews with people who were members, collaborators, or community leaders related to environmental struggles in Cidra. The interviews lasted approximately 30 to 45 minutes. The focus group interview was conducted with five active members, and a collaborator to the group had a duration of 1 hour and 12 minutes.
The data collected for this research on informal learning in an environmental social movement comes from my personal reflections as a member and leader of Despertar Cidreño, documents, publications of this organization, newspaper articles, individual semi-structured interviews with members and supporters of Despertar Cidreño, and a focus group interview. The focus group and eleven one-on-one interviews were conducted from March 1 to March 22, 2016. The interviews were conducted and recorded in the Spanish language. From April 2016 to July 2016, the interviews were transcribed in Spanish with the help of a stenographer. In July 2016, the researcher began the translation of approximately 200 pages of the transcribed interviews into the English language; the translation work concluded by August 2016. In September 2016, I started coding the transcripts and completed the work during the first week of October 2016.

Research Questions

The following questions guided this inquiry:

1. What sort of learning occurs in a social movement and how does this learning align with Freire’s popular education conceptual framework?
2. How do participants in the environmental social movement produce knowledge?
3. How do participants become aware of their knowledge?
4. How does incidental learning occur?

Data Analysis

Coding was conducted by reading the interviews and notes. They were classified into categories. Categories were organized in a chart to facilitate the visualization of the coding. Coding involves, among others, “classifying and labeling the primary patterns in the data”
(Patton, 2002, p. 463). Data from interviews were collected through recording and transcribing. The analysis of the interviews used a thematic analysis approach.

There are various analytic approaches to narrative analysis: thematic analysis, structural analysis, dialogic/performance analysis, and visual analysis (Reissman, 2008). The thematic analysis depends on sorting into categories the accounts that are being told. The structural analysis considers the ways in which the narratives are structured and the function of language in the stories. It does this equally on the textual and the cultural levels. Dialogic/performance analysis centers on the difficulty in analyzing stories that are co-constructed or performed. Finally, visual analysis emphasizes the study of visual methods including art, video, and digital media (Reissman, 2008).

Data Sources

Purposeful sampling was utilized to select the interview participants. This technique is mostly used in qualitative research for the identification and selection of information-rich cases for the most efficient use of limited resources (Patton, 2002). This includes finding and choosing individuals or groups of individuals who are for the most part well informed about the issues to be studied (Creswell, 2013).

In this research, data came from several sources, including interviews with persons related to the struggles in which Comité Despertar Cidreño has been involved. There were three different levels at which interviews took place: with persons active in the group, persons who were members of the group, and people who belong to the communities where environmental struggles took place. These interviews were conducted with open-ended questions. An
interactive interview or focus group session was held to explore shared knowledge in the Comité Despertar Cidreño.

Another source of data was field notes. I wrote a draft of my personal story and a chronology of the environmental struggles in Cidra from 1986 to 1998. Using this timeline and my notes, I cross-checked my records with a collection of all bulletins that Despertar Cidreño had published since its foundation. I also revised a personal collection of news clips and examined posters, banners, pictures, and videos stored in the Instituto Secular de Nuestra Señora de la Altagracia in Cidra, which also serves as the Despertar Cidreño headquarters.

I wrote autoethnographic vignettes around memorable events in the history of environmental struggles using the transcribed individual and focus group interviews. As Anderson and Glass-Coffin (2013) state, “The issue of self-description and introspection, in general, is central to auto ethnographic fieldnote writing” (p. 66).

Coding

The individual interviews were coded using a descriptive coding approach. Descriptive coding condenses the underlying theme of a portion of qualitative data in a short expression or word (Saldaña, 2013). The coding work results in a summary or guide to the data’s contents. It is a necessary foundation for additional study and interpretation.

Coding was done using the QDA Miner Lite free-version software. To analyze the data, I read the translated interview transcripts and used a highlighter to underline short phrases that summarized the key theme of a piece of the interview. After highlighting the topics in the translated interview transcripts, they were entered into the QDA Miner. Using the QDA Miner, a
list of codes was created as well as the passages of the interviews from which the topics were mined. Once the codes and the texts were finished, the data analysis was conducted.

I read the transcript of the interviews twice and then read the passages related to the codes. The main categories identified were community struggles and experiences, the Vista Monte struggle, Despertar Cidreño environmental struggles, civil disobedience, facing adversity, daily life versus activism, connection to the land, childhood experiences, learning, popular education validation of knowledge acquired through own experience, faith and spirituality in the struggle, experiences of healing, losing fear, identity and culture, and historical memory. Categories were modified to encompass about 80 codes and topics that emerged during the first two cycles of coding.

Based on the interviews and the autoethnographic narrative, several categories of learning in the environmental social movement appeared. The overarching themes that emerged from the study were popular education, knowledge production, reflection and knowledge about nature—experiences, learning about society—reflection, learning about organizing and developing actions, learning about popular education, and reflection-retrospective cognition.

Trustworthiness

Trustworthiness is related to intellectual rigor, professional integrity, and methodological competence. “The task is to do one’s best to make sense of things” (Patton, 2002, p. 570). Patton presents a series of guidelines for quality in autobiographical forms of self-study research (2002, p. 571) adapted from Bullough and Pinnegar (2001). All of the guidelines are relevant in guiding my research. However, I emphasize the point that “autobiographical self-study research must engage history forthrightly, and the author must take an honest stand” (p. 571).
I agree with Patton (2002) that the traditional directive to be objective can be replaced by highlighting trustworthiness and authenticity. It can be achieved by guiding the research through a balanced “account of multiple perspectives, multiple interests, and multiple realities” (p. 575).

To deal with the issue of trustworthiness, I included several data collection sources in conjunction with individual and collective interviews, observations, conversations with members of the group, and my notes. Also, I conducted a thorough literature review of bulletins, publications and news clippings about the environmental struggles in Cidra and examined banners, posters, pictures and meeting agendas stored in the office of Comité Despertar Cidreño at the Altagracianas house in Barrio Arenas in Cidra, Puerto Rico.

The interview transcripts and translated versions and recordings were organized in files; the coding was organized in Excel spreadsheets and can be retrieved without a problem. The conceptual framework of the study was discussed at the outset of the study in a way that can be evaluated and criticized.

To establish the validity of the study, research questions had been analyzed from a variety of perspectives to attain reliability across data sources. The perspectives from participants have been incorporated in the form of vignettes and quotes taken from the transcribed interviews. The biographical part of the autoethnography has taken into account the different stages of my life as an environmental and social activist.

Bias and Assumptions

The researcher is described as a crucial human instrument (Creswell, 2013; Fetterman, 2010). As a key tool in the research, the researcher cannot detach him or herself from the subject of study. In the relationship between the researcher and the researched, knowledge emerges and
develops. Therefore, researcher biases come into play even if they are not recognized (Mehra, 2002). It is essential to acknowledge biases and assumptions (Creswell, 2013; Patton, 2002). The validation of the study depends on, among other things, elucidating your biases from the beginning of the study. As Creswell (2013) puts it:

> Clarifying researcher bias from the outset of the study is important so that the reader understands the researcher’s position and any biases or assumptions that impact the inquiry. In this clarification, the researcher comments on past experiences, biases, prejudices, and orientations that have likely shaped the interpretation and approach to the study. (p. 251)

For more than 20 years, I was a high school environmental sciences teacher in Cidra, Puerto Rico, and from 2000 to 2012, a bilingual high school science teacher in Streamwood, Illinois. My previous experience is twofold, as a practitioner in the field of popular education and as a militant and leader of the environmental social movement in Cidra, Puerto Rico. I have had prior experience in the field of popular education. From 1989 to 2000 I coordinated the Methodological School of Grassroots Leadership of Taller de Educación Alternativa (TEA). From 1987 to 2000, I was president of Comité Despertar Cidreño, an environmental grassroots organization in Cidra, Puerto Rico. After returning to Puerto Rico, I incorporated again to Comité Despertar Cidreño, for which I am presently the coordinator.

My personal story and the environment in which I developed as a child played a decisive role in my passion and desire to protect the environment. This love guided me to become an environmental science teacher. My conceptual and philosophical points of view were, at first, intuitive, starting with a firm attachment to nature and a passion for protecting it. A second stage was militancy for social transformation; it began from a desire to bring social change, an activist phase, that comprised community, political, and trade unionist activism (Colón-Rivera, 2003).
A third stage has been to tell the story of many people who have contributed to building knowledge and making the defense and protection of the natural environment not an individual effort but a collective one.

My philosophical point of view is that social transformation is conquered through popular participation. This participation involves the production of knowledge. From this perspective, humans are intellectuals, but not all humans have in society the function of intellectuals. As Gramsci (1999) stated:

When one distinguishes between intellectuals and non-intellectuals, one is referring in reality only to the immediate social function of the professional category of the intellectuals, that is, one has in mind the direction in which their specific professional activity is weighted, whether towards intellectual elaboration or towards muscular, nervous effort. This means that, although one can speak of intellectuals, one cannot speak of non-intellectuals, because non-intellectuals do not exist. But even the relationship between efforts of intellectual-cerebral elaboration and muscular-nervous effort is not always the same, so that there are varying degrees of specific intellectual activity. There is no human activity from which every form of intellectual participation can be excluded: homo faber cannot be separated from homo sapiens. (p. 140)

The learning experiences of environmental social movement activists have not been told from the point of view of the participants. Through an autoethnography, I relate and analyze my learning experiences and the learning processes in a social movement. This research will contribute to the academic knowledge of learning in a social movement. Consequently, it will help to set the steppingstones of the history of the environmental social movement in Cidra and Puerto Rico from the ground up.

Chapter Summary

This chapter discussed the research methodology that combines a personal reflection as a member and leader of Despertar Cidreño, an autoethnographic narrative, with qualitative
interviews and a focus group interview on learning in the environmental social movement in Cidra, Puerto Rico. The research questions, coding process, and data collection are explained. Biases, assumptions, and trustworthiness of the study are also described. In the next chapter, I will present a discussion and analysis of the data obtained through the interviews.
CHAPTER 5

FINDINGS

Motivation to Participate

I am an active participant-researcher of this study. As an activist-researcher, I have been part of the participatory action research process in the social movement struggles in Cidra, Puerto Rico, since 1976. This study is autoethnographic because it is the most suitable research instrument for an activist that has been part of the social struggles. As a researcher, I cannot be an outsider trying to understand and examine the practice of a social movement of which I am a participant. This reflection on practice is part of a collective process shared with members and collaborators of the environmental social movement in Cidra.

My identification with the environment and nature began to manifest when I finished the third grade of elementary school. In our neighborhood, our one-room school only offered first to third grade. At the beginning of fourth grade, I was sent to the school in town. To get there, I had to walk down a dirt road to reach the main road and from there walk approximately two kilometers to get to school. I then had to walk back the same distance to return home. I remember that there was a shortcut to get to my house through a swamp where a small tributary creek ran to Cidra Lake.

The people had placed some planks to walk over the creek, and I had to balance carefully so as not to fall in the water. I learned to walk through this place with my father, who enjoyed walking and finding shortcuts. I feared walking alone by this place and did it only when my
father was with me. Everything was new for me on the first day I walked up to the school. That
day, I had the opportunity to observe along the way the lake, orange plantations, and guava
and mango trees. One or two cars drove by sporadically as well as some trucks loaded with cut
sugarcane. As soon as I left the dirt road to get onto the main road, I sensed the smell of livestock
from a dairy farm located along the pathway. I got used to seeing that landscape daily. Noticing
any changes on it was easy.

The change from the one-room school to the bigger school in town was not easy. The
breakfast that my parents could provide was a cup of coffee with nonfat milk and sometimes a
piece of stale bread with butter. My mother toasted the bread in an old kerosene stove to make it
palatable. I remember that the milk we drank was given to my mother by acquaintances who did
not like it and was a surplus agricultural product from the United States, distributed in the so-
called stations of the PRERA (Puerto Rican Emergency Relief Administration). It was a powder
that was mixed with water. It had an unpleasant flavor and barely tasted like milk.

They served lunch in the school dining room, in trays of metal, and nonfat milk in thick
drinking glasses. All the food that was prepared was a surplus of agricultural products from the
United States, canned or packaged to be distributed in Puerto Rico. The lunch often served was
rice with soybeans (which by the way were very hard) with sausages or sardines. The dessert
usually was sour grapefruit or carrots with pineapple in syrup and sometimes a piece of
American cheese. At lunch, they always gave us a glass of nonfat milk that we were forbidden to
discard in the garbage.

Doña Manuela, the director of the school dining room, was in charge of making sure that
the disgusting milk was not discarded. She stood as a sergeant beside the food waste container. If
she saw that you had the full glass of milk, she would order you to drink it, and then you
stoically pressed your nostrils with your fingers and swallowed the liquid in one gulp. There was
no way to escape that awkward moment.

In the afternoon after school, on the way back home, my friends showed me an
abandoned plantation of guava trees on the banks of the road. To appease hunger, I often entered
and collected several ripe guavas that tasted like heaven. Since those early years, I learned to
love the trees and nature. I enjoyed the fruits and the shade of the trees every day. We did not
have transportation to school, so we walked every day, rain or shine, until the Christmas holidays
in December and the summer vacation in June and July. The change of the weather in December
was felt when the temperature got cooler, and there was the occasional fog in the morning. It
always cheered me up as the change in the climate predicted that the long-awaited Christmas
holiday was near.

A time of sweets and goodies. Simple, cheap, but they broke the monotony and routine of
the school year. The typical foods of Christmas in Puerto Rico are lechon asao (whole roasted
pork), arroz con gandules (rice with pigeon peas), dulce de coco (coconut candy), tembleque
(coconut pudding) and dulce de naranja (bitter orange preserves). Once a year these delights
reminded us of the good things life brings. Some Christmas holidays were stressful, especially
those in which my father was unemployed, and there was no money to buy toys and sweets. It
was frustrating as I watched the toys in the shops and dreamed of them.

There were Christmas holidays when food was scarce, no sweets or cookies. My mother
often tells the story that once, before Christmas day, she prayed to God to provide something for
the celebration. In those days, a Mennonite missionary came to the house and brought a bag of
candy, cookies, toothbrushes and toothpaste, and even a stuffed giraffe. On January 6th in Puerto Rico we celebrate Three Kings Day when children get toys and candy. I was ten years old and was expecting toys. I only received from my aunts and uncles five notebooks, pencils, and a dollar in quarters. I was furious because I wanted toy cars and the Three Kings did not fulfill my wishes. My mother tried to comfort me and told me to go to the town and buy some toy cars with the quarters I received. The anger did not last much. I got a few tiny tin cars, and I went to the backyard to play among the trees where I heard the birds singing and watched the red poinsettias. It was a peaceful refuge where I dreamed and forgot the problems and scarcity.

My mom in those days gathered us in her bed and read the passage about Jesus and the meaning of his birth (Luke 4:18-19, New King James Version):

18 The Spirit of the LORD is upon Me
   Because He has anointed Me
   To preach the gospel to the poor;
   He has sent Me to heal the brokenhearted,
   To proclaim liberty to the captives
   And recovery of sight to the blind,
   To set at liberty those who are oppressed;
19 To proclaim the acceptable year of the LORD

That Christmas marked my spirit, and at that time I became conscious that I belonged to the poor; that my family and I were part of the majority of the people in Puerto Rico who lived under poverty levels. My father was unemployed, and he migrated several times to the United States to work in different jobs but always returned with his hands empty. Later in life, those early experiences would motivate me to participate in the struggle for social justice and the environment.

One of my favorite hobbies was to walk for a few minutes and arrive at the shore of the lake behind my house. I would make an improvised fishing rod with a bamboo branch, cord, and
a fishing hook. I would sit under a tree to fish. The water was clean, and the fish could be seen swimming near the water surface. When I had caught nearly a dozen small fish, I would return to my house and with the help of my mother fried and ate the fish. I remember that for the boys in the neighborhood the entertainment consisted of climbing the trees, running through the fields, and fishing or swimming in the lake. I never swam in the lake. My mother feared that I could drown and forbade my brothers and me to swim. However, sometimes I went with my friends and stayed on the shore watching them having fun swimming in the lake.

When I started high school, I realized that the landscape was changing. The small dairy farm at the entrance of the community was purchased by an industrialist who transformed it into a dairy farm of thousands of cattle that were locked up in a huge shed and fed with different products including sugarcane bagasse. Bagasse was stored in a huge storage building and repeatedly caught fire by spontaneous combustion. An enormous amount of manure, urine and other wastes from cows flowed continuously through storm sewers and discharged into the lake.

Figure 7. A photo sequence of two sections of Lake Cidra. You can see the unusual way in which flowers have reproduced. According to the civil defense director of the municipality, Liberato Garced, this situation has worsened by the waste of three adjacent dairy farms that are turning it into a swamp as you can see in the bottom picture. M. Rodriguez “Situación Anómala” [Anomalous Situation]. El Mundo. (1970, August 7)
The lake began to be covered with water hyacinths and other weeds that prevented the water surface from oxygenating, giving the water a murky aspect and a putrid smell. In 1970, the situation was critical, and the director of the Cidra Civil Defense denounced the pollution of the lake with the manure coming from the dairy farm. That was one of the first significant changes that I noted in the environment and landscape that was part of my daily life. A rumor spread through the town that the mayor at that time, Tomás Rodríguez, went to visit the owner of the dairy farm, César Calderón, who was a millionaire from the capital of Puerto Rico. The mayor asked him to stop polluting the lake; to that, Calderón answered that he could buy the town in “perras prietas” (pennies).

My experiences as a child marked my vocation as an environmental activist and teacher of biology and environmental science. Growing up in a poor working-class community contributed to my social and political awareness. The experience of being hungry influenced my option to pursue a college degree and at the same time struggle for social justice. Participation in the church youth (Unión de Jovenes Bautistas de Puerto Rico) and reading the Bible from the perspective of the poor inspired my involvement in the struggle for social justice and decolonization of Puerto Rico. In my early readings on socialist thinkers, I confirmed the connection between Christianity and the struggles against oppression. Frederick Engels (2007) described this confluence between Christians and workers:

The history of primitive Christianity presents curious points of contact with the modern labor movement. Just like the latter, Christianity, in its inception, was a movement of the oppressed: it appeared first as the religion of slaves and freedmen, of the poor and unprotected, of the peoples subjugated and dispersed by Rome. (p. 3)

Through the individual interviews, we see learning processes that account for individual and collective experiences. One outstanding feature of the motivation to participate in the
environmental struggles that appears in the majority of the interviews is a connection with nature through participation in farm duties since childhood and living in the countryside.

Davico explained the influence that agriculture and farming had on his decision to get involved in community service and the environmental struggle. The connection to the land at an early age was a determinant in the development of his love and attachment to the environment:

Because …, I was in a program called Vocational Agriculture. And Vocational Agriculture motivated me more to love the land. And then I would have some seven or eight years. I was in the seventh grade [middle school]. Perhaps it was nine years old. The thing is that my dad bought me a cow; we raise it. And for me, that cow, I looked after it tremendously. I think it had a calf. I had rabbits. And I had to keep a record of all that. I had a piglet, and my first income was $60.00 from that piglet which was sold after a year. And that is as far as I remember from my childhood. But much like my neighbors. Very helpful people. Very committed to helping. And these are things that one learns more by the example than with what is said. I had a lovely childhood and also beautiful youth. I belonged to a 4H club that also the minimum age was ten years old, and to me, I was accepted with nine years old. And then I went to camping at San Germán. They did not let me swim on the beach because my parents did not give me permission. And so I did not bathe in the beach. All my friends swam except me. And that was negative, but everything else was good.

Rosaura related that her family depended on cultivating the land for subsistence. A connection with the land provided the food and the shelter for the household. As most of the members of Despertar Cidreño, she had an early relationship with the land as a child, I learned by observing her surroundings. As she describes her childhood:

Well, I was born in Barrio Arenas of Cidra. I was born in the countryside. In the land that my father purchased and dedicated it to agriculture, for they were the means that we had to sustain us. I spent childhood in that field. At seven years I went to school and studied until the sixth grade. No, until third grade in a small school in the neighborhood and then went to complete up to the sixth grade in the town. The school Luis Muñoz Rivera. After there was a situation that made impossible that I go walking or that all the family and all neighbors could go, it was difficult, and then I did not return to the school until I had 16 years that I went to study at night and finish my high school.
Paula, the leader of the struggle for the closure of Cidra’s landfill, recounted her experience with agriculture and how it motivated her to be an environmental and community activist. The motivation for her was not an intellectual understanding of nature. It was a connection with the land that intertwined with the issues of a deteriorated environment. It was transmitted by her dad, as she tells us:

Good, the environmental fight, look I did not have the opportunity of being closer to Despertar Cidreño Committee. That is to say, the struggle that began with Vista Monte. I was not into that. Because I tell you something, regarding love to planet earth, it was always my thing. Because daddy raised us in the agriculture and daddy said the seed that you throw to the ground you are going to harvest the fruit. Be confident. And it was true. My dad knew to plant a seed and didn't care how the terrain was; the plant gave fruit. And he had great faith. Great faith in the planet. Because daddy disliked abuse to the Earth. If he had to make space for tree planting and, then let it rest, and would plant that area. But he never abused the land. No. I did not know that. And I believe that being so; he gave us the example to be good citizens of the planet.

Lola lived in a big city. Nevertheless, she had contact with nature through “paseos.” The roots of her identification with nature and later involvement in the environmental struggle lie in the motivation provided by small opportunities of feeling and knowing nature. This little opportunity of contacting nature were symbols that represented it, like ornamental plants or a fruit tree. Learning about nature and developing a series of feelings about it are transmitted from elders to children inadvertently. She became aware of the connection to nature when the questions in the interview brought forth this reflective recognition. She narrates this childhood experience:

Maybe it was not so deliberate because we lived in a city. And Bogota [Colombia] which is the city where I was born and raised is tough. You do not have many spaces to live nature or for one being aware of it. I remember the tree. But I think it was the only house that had a tree out there so big and so beneficial, I would say. Um, I remembered that my grandmothers, my aunts, and my mother always it was said that they had a good hand with plants. But at home, there was not many. They were just a few ornamentals. So we
lacked that contact with the environment as such very much. We lived surrounded by cement. And that little contact with that tree was got us close to nature in some way.

My aunt raised pigeons. And I also remember that contact with such animal in particular. Because not many animals could be seen. Not many out there. So there wasn’t like many. I do remember it in a very special way when an uncle - brother of my mother - he would take us for a walk. He distributed milk in trucks that earlier were uncovered. They were not closed vans as they are today. They were uncovered and transported milk cans. Then, during the weekend he took out all milk cans to wash them and to disinfect them and the truck was left unoccupied and there we climbed all, and he raised up us to have that contact with nature.

They were sites not far from Bogotá, but they were places where you could enjoy nature. And we were there doing what here is called the paseo de olla [potluck]. It is to take the food, light on the fire there and cook and eat and share with the family. But playing was so present in us; I remember that what we were doing was running and running and running among the trees and getting dirty and muddy, with our cousins. But never, never be so conscious of the beauty of the place, what pleasant time we spent until so many years later that I remember of that.

Several participants said in the interviews that around the 1950s and 1960s in Puerto Rico, parents taught their children service to others and the community. It was part of the community culture and the Catholic faith in which they were raised. Most of the service was done by the females in the family when other women in the community were giving birth, and they were sent to help with the household chores. Margarita’s involvement in the community started from her faith and the tradition in the community.

Um, look. I would say that my childhood, I tell you that it was a good productive youth. Because we were taught to struggle since childhood within the communities themselves. It was a beautiful childhood. I tell you of my childhood; I can write a book of beautiful things that we had at the time that we were growing up and at the same time were doing things within the community which is what our parents taught us. To share this important part of the human being that is helping others.

Well, my childhood, we since little I remember that first, it was our faith what began. Started with our faith and apart from faith, since then when we continued developing our social work that for me continues today. I say that at that time it was the grassroots work that we were having. And there it was that the work within communities continued to develop.
I remember very well when people gave birth; we went to wash their clothes in the creek, and we help them with house chores. And all of this was grassroots work that continued to develop within us as children. And I think that we today, we have persevered in the community work that has given us such a force, that strength and at the same time has helped us, as they say, to open the path.

Rosaura narrated a similar experience at her community in Barrio Arenas. Most of the Comité Despertar Cidreño members are women. Also, the leadership in many communities have been women. These interviews point to the fact that service and participation in the community had been part of the rearing and nurturing of these leaders. Rosaura describes this process:

Well, I was born in Barrio Arenas of Cidra. I was born in the countryside. In the land that my father purchased and dedicated it to agriculture, for they were the means that we had to sustain us. I spent childhood it in that field. At seven years, I went to school and studied until the sixth grade. No, until third grade in a small school in the neighborhood and then went to complete up to the sixth grade in the town. The school Luis Muñoz Rivera. After there was a situation that made impossible that I go walking or that all the family and all neighbors could go, it was difficult, and then I did not return to the school until I had 16 years that I went to study at night and finish my high school.

After I had finished high school, I started to work in a factory. And during my development up to 19 years that I began to work in factories, now I belonged to many social and religious groups. For example, I started being a member of the catechists teaching religion to children. Then I joined the Catholic Workers Youth at age 17, a group that comes with the new; I could say, change. The new change of industrialization that there was at world level. And this was in favor of the workers. I belonged to that group; I would say for quite some time. And then I met the Young Catholic Workers who were also a progressive group, of studies, of community work, about working with youth. I was also Daughter of María. And in my community, I did social work because our parents taught us to help postpartum women. I also worked on the farm with my father and my brethren, and neighbors. In other words, that was a life of joy and full communication. We celebrated all. That is, it was a very beautiful life. Despite all the difficulties and all the situations when you live in poverty when you live from the earth, but we had what we needed. My dad was a man who was watching out; my mother was also a fighter. It was a big family, or we are a large family, of 14 siblings but, I spent a good childhood and youth. We helped the people of the community, help them during postpartum, we would help them to clean, wash, cook.

Motivation to engage in the environmental struggle has another dimension. The spiritual aspect of the Christian faith has been present in all the environmental battles in Cidra, Puerto
Rico. Most of the participants in the interviews affirmed that their Christian faith played a significant role in their commitment to service in the community and the struggle for a better environment. Father Juan, a Catholic priest who has supported the environmental struggles and the social movements in Cidra and Puerto Rico, understands the call of God as a service to others. Learning in the struggles includes a spiritual dimension, learning to discern the social implications of Christian commitment. Father Juan explains that he learns from his most humble parishioners:

I think that this mother earth, as we take care of our mother, as we take care of our family, take care of citizens. Hence we must care for the entire planet. Because this encompasses survival if we do not take care of what God gave us, every day we are going to see it by global warming, by different situations on the planet. And I think that the task is never-ending. The mission will always remain, but if I do not finish it, another will continue it. But someone must continue the duties of preserving and taking care of the planet.

Likewise, I think that one of the tasks, this morning what someone said in the celebration of the Eucharist, we have to look after each other. Moreover, the lady that was telling it I believe that she only has a third grade [of schooling]. Those who supposedly don't have much education give us a testimony. Because one of the prayers that she did in the morning, in the Eucharist, she said we must care for one another. I believe that she said in a simple prayer what we have to do. Take care, and care for what God gave us. That is this planet. That sometimes we have abused and neglected and unattended it.

Father Juan also participated and witnessed the struggle against the U.S. Navy in the island of Vieques. Members of Despertar Cidreño engaged in this fight motivated by the environmental destruction that was taking place and their commitment to peace and social justice. Father Juan and Davico expressed that they learned to share and work together with atheists who were involved in the same struggle. Father Juan underlined the learning that occurs in participating alongside people of different beliefs and levels of education:

Well, I think that we learn from each other in the struggles, the truth. One should never consider that you know everything. Moreover, especially in environmental struggles and social struggles must always have the courage to admit that you do not know everything.
That one will learn on the go, and one learns from the environment, one learns from planet Earth, one learns from the same people that one goes encountering on the way.

And the most interesting of these struggles is that sometimes one finds individuals who are declared atheists have no affiliation or do not have any religious practice. Then I have come to the conclusion that sometimes they are Christians like you, or sometimes even more. Because they have confidence, not only in them but in their right to act. Moreover, sometimes they say well, in what we trust? I always say that they trust God even though they do not mention it.

Knowledge About Organizing

In 1973, I enrolled in Colegio Universitario de Cayey, a campus of the University of Puerto Rico. In my second year of college, I became interested in political activism and joined the Independence University Youth (JIU), which was the political wing of the Puerto Rican Independence Party (PIP) at the university. I became involved with proselytism along with workers and distributed bulletins in the Consolidated Cigars Factory in Cayey, Puerto Rico. At that time, the PIP was very active in various social struggles, including supporting workers, support of land squatters, and the fight against obligatory military service.

After the general elections of 1972 in which the PIP did not get the number of votes expected, the results sparked a debate on the causes. The electoral frustration ignited an intense debate in the party about the political philosophy and political theory to guide action. The most radical sectors of the organization, including the university youth, postulated that the PIP should become a revolutionary party, oriented by Marxist-Leninist theory, and that the working class should direct the political struggle for independence and socialism. The most radical sectors were defeated in that discussion after a General Assembly reaffirmed the moderate electoral nature of the party.
Those sectors abandoned the party, integrating into Left organizations. Among them, a group decided to organize the Popular Socialist Movement (MSP). I became involved with this group for about seven years. Subsequently, I left the movement and became a leader of Cidra’s Teachers Federation for nearly ten years. In the meantime, I started to document the deterioration of the environment in Cidra, photographing all the areas where factories were being built, among them several pharmaceutical companies and facilities that produced concentrated syrup of Pepsi-Cola and Coca-Cola. The closeness of these plants to Lake Cidra awoke in the community suspicions that the effluents of their manufacturing processes were being discarded into Lake Cidra.

A significant aspect of this participation in the progressive political movement and the workers’ movement was learning organizer skills such as the production of newsletters and flyers, creation of slogans, street banners, and leaflets. Making a picket line, marches, and rallies were among other forms of struggle. This learning was then applied to the struggles in which I participated in the environmental social movement in Cidra.

The members of Despertar Cidreño learned to organize and direct a workshop or a meeting, present papers in public hearings, write articles, and use laws and environmental regulations to submit complaints to government agencies, among others. Most of the members did not have these skills when they joined the movement but acquired them either by self-directed learning, informal learning, or socialization. Patria tells it this way:

Right. I think that solidarity, the solidarity of the group, that one keeps developing more every day. Also in the university, my professors greatly influenced. Through the branch that I studied. But I believe that solidarity in the group, everybody, I believe that it developed the phase of solidarity here. And let me see. Ah! and knowledge. The environmental knowledge I learned. I practically hardly knew. Right. And now I can develop an environmental topic. I admire Margarita a lot, because Margarita, she was our
detective. Our detective who called us, look over this is going on, the other thing is happening.

Don Leo explains the way he integrated to Despertar Cidreño and how he discovered that he had artistic talents that he developed while preparing the banners and posters for the rallies and pickets that Despertar Cidreño organized:

Okay. I was integrating because when the list of problems of Cidra was made, the one that came out as number one, or those which the majority agreed was the poor quality of the water we drank. And the terrible conditions in which the lake was. And then, Gándaras II is adjacent to the Lake, hence then I am integrating and looking for ways that the situation of the water we are drinking will be taken seriously, and there is where I am more seriously integrating into the situation of the group. Then they give me the role of doing the ads and the range of art things that was an excellent experience for me because I did not even know, I had that talent. And thus, little by little I was integrated into different areas. Because our slogan was for the right to health and life, it creates a..., how it is called, a panorama, but a range of struggles that fit within health and life. And then, there was that the thing got complicated to me. Because then, we had to be supporting things that had to do with life. But as we were focused on that project, it was more laborious, but it was at the same time very enriching.

Learning by Doing and Participating in the Struggle

In 1986, I moved to the Vista Monte housing development in Cidra. One morning some of my neighbors observed construction machinery excavating a trench to install a pipe that aroused many concerns in the community. After some inquiries, we discovered that the pipeline would connect the waste of the Pan American Hospital to the community’s treatment plant. The supposedly treated water effluent discharged to the Sabana River, a tributary of Lake Cidra. The lake is a source of drinking water for the town of Cidra and the metropolitan area of San Juan.

The small waste treatment plant was very close to my house in Vista Monte. We all knew that it was not working properly and that a massive waste discharge would dislocate the waste treatment process that was not functioning correctly and create a higher pollution of Lake Cidra.
One morning in 1987, neighbors found that a crew was working at the entrance of the community to prepare the road to dig a trench and install a pipeline to bring wastewater of a hospital being built close to the community. Immediately the voice spread in the community that a private company intended to connect their sewage pipeline to Vista Monte. That night the neighbors met to discuss the situation and decided to organize and oppose the connection to the community wastewater treatment plant because it represented a problem of pollution both to the community and to Lake Cidra. At that meeting, I was elected president of the committee of residents of Vista Monte Community, and a dynamic group of neighbors were named to the remaining posts of the organization.

After that, the community organizing process took hold. At the entrance of the community and the area of the installation of the pipeline, a barricade was erected with old vehicles and other materials. The committee published newsletters, made banners, and held weekly meetings around the blockade. One early morning, when it was still dark, a company construction crew and lawyers accompanied by the Fuerza de Choque (Puerto Rico Police Tactical Operations Unit) removed the barricade and placed heavy machinery in the area to start digging.

The mobilization of a significant number of residents prevented the operators of the machinery to start working. After sunrise, the press arrived and our lawyer came to the area. The construction company lawyers agreed to go to the municipal court of Cidra to settle the dispute. With official documents in hand, that the company claimed were the construction permits, our lawyer, Alejandro Torres Rivera, argued that the papers did not constitute a permission since they were conditional to a series of laws and regulations that needed to be met.
That same day we returned to occupy the area of construction, and we sat on the pavement. Our lawyer also participated in the civil disobedience. During that weekend, the community organized a march through the town streets, and a large number of people attended the rally. Taking advantage of the effervescence and agitation in the town, the community pressed the mayor of Cidra to reverse the local construction permits.

Meanwhile, lawyers for the corporation filed an injunction in the Superior Court prohibiting residents and the directive of the committee to interfere with construction. We were served with a subpoena to attend District Court. We were also intimidated by a private security police company in Puerto Rico, well known for providing services to break workers’ strikes. Despite the filing of the injunction, and the intimidation, the neighbors challenged the court order.

After the court had issued an injunction prohibiting the community to interfere with the construction crew, the construction company returned to the site. When the crew started moving the construction machinery to the entrance, we stood in the area preventing the construction crew from working that day.

Lawyers for the company filed a motion for contempt to the Superior Court, and a judicial hearing was scheduled. In that hearing, our lawyer demonstrated that there were many flaws in the construction permits issued and that the environmental law was violated. The judge determined to halt the injunction and decided to start a trial, which lasted for over one month.

Eventually, the community of Vista Monte successfully presented the evidence of the pollution of Lake Cidra, the deterioration of the sewage treatment plant of Vista Monte, and that
the proponents of the construction project failed to conduct an environmental evaluation mandated by the environmental laws of Puerto Rico.

Nine of the interviewed participants talked about the foundation of Despertar Cidreño and the surge in environmental struggles connected to Vista Monte community struggle during the 1990’s in Cidra. Valentina stated that:

Umm, Yes. I remember the march. I was present. Moreover, it arose based on all that was going to happen with the sewage from the Hospital to the treatment plant. Also, that is where Vista Monte, especially I think it is the force of this..., it creates this movement so that we can then defend and not allow that these plant [sewage treatment] was used, but that they must make an additional facility to collect their waters. Moreover, I think it was one of the most attended marches in defense of the environment that has taken place in Cidra.

Learning in the environmental social movement also occurred by participating in the struggle of Vista Monte community. Direct action opened various fronts in which people were involved according to their choices and interests. Patria explained how she learned from that participation:

Right, when I started in the Department of Family, the Brotherhood of Social Services Workers was organized. They contacted me in Cidra. It was first by Chapter, there I presided over one of the chapters at the level of Caguas, and was always the delegate from Cidra, and one day I found Rosaura walking down the street, the Altagraciana, she invited me to participate in Despertar Cidreño right. Ah! No, sorry. Before that, for the activity when the struggle of Vista Monte began against the Pan-American Hospital, Miriam, and another teacher went to visit me, whom I cannot remember. It is that the two were teachers. They asked me to join the struggle of Vista Monte. Moreover, then, because it was like another struggle. Because we did a lot of picketing in the Department of Family, right, for the working conditions. And I remember that I took vacations if you count Saturday and Sunday, 45 days. And I spent them in court every day, all day, every day. There I learned a lot. I was interested in following a law career. But the experience I had there where I saw that there were so many scams, I decided not to pursue a law career. I, therefore, stayed there. I did not study social work. After 15 years, it was that I came to work as a social worker.
During this process, multiple activities were carried out to raise funds for the community's fight. Residents participated in the various public hearings that the environmental agencies conducted on the issue. At all times, the residents demonstrated firsthand knowledge of environmental problems of the community and its surroundings. In the process, they also acquired the knowledge of scientific jargon that described the issues of water pollution that the neighbors knew already by experience. For example, they knew that water from the Sabana River smelled rotten and looked murky. When the scientist Neftalí García carried out measurements of dissolved oxygen in the river, he found low levels of dissolved oxygen that reflected a high degree of pollution. This was due to the activity of aerobic bacteria in the decomposition of organic matter. Colloquially, Vista Monte residents described the water as rotten and murky. After that, the neighbors added to their vocabulary the concept of low levels of dissolved oxygen as an indicator of pollution of the water.
Eventually, after a long struggle, the community prevailed in the court, and the hospital had to build their own wastewater treatment plant. The victory of Vista Monte generated an atmosphere of optimism and confidence that led a group of grassroots leaders (including me) to found Comité Despertar Cidreño.

Findings and Types of Learning

One of the tenets of Freire’s approach to education is the emphasis on setting the educational process in the lived experience of participants. Those lived experiences form part of what Halbwachs (2004) calls the collective memory. He affirms, “The collective memory, on the contrary, is the group seen from inside and during a period that does not exceed the average of human life” (p. 88).

Paulo Freire’s (1982) popular education framework that encourages participants to utilize their experiences and knowledge unlocked a series of opportunities for informal learning through popular education workshops. It opened a myriad of possibilities that covered different learning areas not only of social inequities and oppression but also areas of spiritual, emotional and physical health.

During the years of 1993 and 1994, Taller de Educación Alternativa (Alternative Education Workshop) and Despertar Cidreño organized a series of popular education workshops with women on health and ecology. Ecuadorian educator and sociologist Ximena Jijón Vega facilitated the workshops. These workshops were led from a participatory perspective and promoted the health of the woman, using reflexology and medicinal plants. The concept of healing was addressed from the standpoint of physical and spiritual health. Workshops aroused the enthusiasm among the women in Despertar Cidreño, which encouraged Margarita and other
women in the group to reproduce these workshops in their communities. Margarita held a workshop of inner healing in the community that had a profound impact on her.

Margarita tells us that what she learned in the popular education workshops led her to facilitate sensitization to nature workshops that promoted the spiritual healing of participants. Margarita became excited, and her eyes glistened telling the story of a workshop she facilitated and how through an exercise of connection with nature a participant abandoned the idea of killing herself and her son. Margarita described the episode:

Umm, I had an experience in a workshop related to the tree with a person who had been planning to commit suicide and kill her son with a machete. Then, Jimena had given us the workshop of the tree. I just took the person to the same place where we do the workshops under a mango tree. And when I gave the workshop, that person reconsidered. But one of the things that most struck me was when the time of the cross came, that you lay like a cross on the earth. That body jumped. The body jumped, and then the person received healing. Upon receiving healing when we come to the next stage of the workshop, she said: “I healed.” The person tells me. And it was her decision to kill herself and kill her son. It was the last alternative that she had when she expressed that to me. I said well if you want I can give you a workshop, right, putting God first and the Blessed Virgin.

Well, then if you agree to it, and she decided to go to the workshop. And that person healed and later died peacefully. Nothing happened in the family. But the decision she had already taken was killing her and kill her son with a machete. In fact, he was with us in Despertar Cidreño. They were three kids who started. It was Hiram; the three children attended when we began Despertar Cidreño. Do you remember?

The participation in conducting a workshop boosted Margarita’s self-confidence in being a popular educator. She mentioned in several parts of the interview that she achieved only elementary school education, but she learned from life experiences like it was a university degree.

The relationship established between Comité Despertar Cidreño and Taller de Educación Alternativa (TEA) influenced both groups. Members of Despertar Cidreño participated in the methodological formation schools for grassroots leadership that TEA held for ten years in Cidra,
Puerto Rico. The contributions of Freire regarding dialogue and participation and the concept of reflection on practice improved the educational and organizational work of Despertar Cidreño.

Patria talked about this relationship:

Well, I was about ten years in “Taller de Educación Alternativa,” well that was a long period of growth. Professional growth. Personal growth, too. And also growth in the religious aspect, as well. I think it is very important. Because when you also begin to see religion from another perspective, more community-oriented, with more solidarity. And I, I mean, and I believe that the workshops, that also the group of Despertar Cidreño participated much in this, in those workshops, which greatly influenced popular education. But not only... right, I would say, as much in Cidra, but nationwide, other professionals. Because there we have who?

Well, I think ... I mean, and many people ... that work of popular education that was developed in Cidra at that moment with these two groups, right, environmental and communities; apart from solidarity between them. Between both people, because we were very supportive. Sometimes we did not know if we were Despertar Cidreño or T.E.A. Because we consolidated so, so much and so much. And I think it was important and marked the path of many professionals who were not from Cidra. And they are now in the public arena as [J] said. I mean, as Margarita said, umm, Lourdes Lara.

Knowledge About Nature--Experience

In the opinion of the participants of the environmental social movement in Cidra, one of the dimensions of the struggle was the knowledge that people in the community had over many aspects of nature and the environment. They discovered the deterioration of the environment through their observations and lived experiences. Chan narrates the beginning of their struggle for the closure of the landfill in Barrio Arenas of Cidra:

In 1979, I had like about 25 years in Chicago. And then, I went back to my homeland, to care for my parents that always I asked the Lord to help me take care of my parents before they departed. And well. Here I am in Arenas here where I was born. Because when I got back from Chicago, I lived in Candelas. And in the time that I was still in Chicago, well they put a landfill in front of the house where I live now. And when we came back there was a terrible environment that you could not live.
Chan recalled the struggle for the closure of the landfill. Her eyes brightened up as she tells the story like she was reliving those moments. Her face shows pride in the accomplishments, not only for Barrio Arenas but also other communities that were inspired and benefited from this struggle:

Then, when we returned to Arenas because it was a very strong thing and started to fight since we were in Candelas, Barrio Candelas in Cidra. But at that time, we went to many places. Furthermore, we went to San Juan, to many places there. We got lawyers and everything but, when we went to a court, they demanded us a property deed as a warranty, and no one could help us but at the same time was the struggle in Vista Monte, and there we stick to that group. By the way, after we made a group called Despertar Cidreño and then, there we got the strength. We made a group, and those guys helped us. We almost, we were imprisoned, but we could fight and well, could continue working for the environment. To this day, thank the Lord, that they closed the landfill. And not only that they closed the landfill, but the strength that we gave to the news media and all, they closed many landfills that many people benefited from the work we did.

Besides learning through service and being part of the traditions and culture of the community, participants were faced with learning challenges. They had to familiarize themselves with environmental laws and regulations and relate their experiential knowledge with the concepts and the language of the environmental sciences. On several occasions, they had to learn and be able to speak in public overnight to be able to depose in a public hearing. The experience of Patria attests to how knowledge is generated by ordinary people involved in action and reflection in the environmental field in close connection with the topics of study. Patria expresses that it was learning to lose the fear:

Right, I think the biggest challenge was to prepare. I say that the group entirely was prepared, right. But the task to go to hearings. Especially the ones about the Connector. We participated, right. You started to attend, but then you went to the United States, and Rosaura went to Nicaragua because I practically participated in all hearings. Except I think that in one, Margarita participated. But all others I was, I went on behalf of Despertar Cidreño. And that was for me very important because that makes you grow, and apart from that, you lose the fear also. Right, that this is important.
Popular Education and Types of Informal Learning

Davico was surprised by the solidarity and fraternity that emerged between Christians and atheists. It was a type of unexpected learning that occurred during the period of civil disobedience when they were waiting to be arrested at any time. Incidental learning is defined as a learning experience that takes place when there is not an intended purpose of learning (Schugurensky, 2000). However, after the experience, the person becomes aware that some learning has taken place. In thinking about that experience, Davico became conscious of that learning. Consequently, for that knowledge to be shared among the participants of the social movement, it needs to be explored through thinking about these experiences.

The approach of exploration, reflection, and action in participatory action research (PAR) reflects the beliefs of Freire; for participants to develop social and political awareness, they must reflect on their experiences to create knowledge. Davico developed a new understanding of the possibilities of working together in alliances with people from other Christian denominations and with atheists and he revealed his surprise in finding this new personal and social dimension.

The awareness of the unintentional learning that happened when participating in civil disobedience in Vieques with atheists took place when I asked Davico what activities he remembered to have been involved during this environmental fight. Schugurensky (2000) calls this awareness process retrospective recognition (p. 5). He explains that the awareness of this learning can be elicited by being exposed to a different environment or having a conversation with a person who asks questions about their learning.

Davico: Also, as I was going to say how was sharing with the people of Vieques, the people of Vieques are the more docile, more educated, more... people, I do not know, more caring. More hospitable. Um, as we were sharing there. We shared in the village.
Additionally, we also shared with fishermen taking us to the church camp of the Catholic Church. Because there we wash the dishes on the beach in the salty water because fresh water could not be used. It was only for drinking. But the utensils are cleaned.

We did not sleep there. We were waiting for the arrests. Yes, and I met many people there, atheists. I remember that they were going to cease bombing and the rest, it seems that we did not know it but, there then came the Navy and arrested us. But not one by one, they sent us by bunches. They sent me; I think was a helicopter and others were taken; I do not remember, in a truck. They took me in a truck. Then the helicopter arrived first. Among those who arrived first was Alejandro.

Eliezer: Alejandro Torres?

Davico: Alejandro Torres. Alejandro Torres is an atheist. However, Alejandro stood on a corner there and when I arrived with the eyes behind the neck because we had not slept in those days for the reason that they had already warned us that the arrests were imminent. Hence, everyone welcomed each other, how well are you. Alejandro went where I was. He did not give me a handshake; he hugged me. Furthermore, then, that for me, a person who does not believe in anything, he gives me a hug. It was a hug that I will never forget. They are experiences that one, in fact, when I go to Festival de Claridad.¹ I always go and greet him.

The learning in the environmental movement not only helped him to develop as a leader but also helped him to deal with his personal and emotional life. He describes how he learned to deal with a severe depression:

And it is not until the time passes. I survived an incredible depression that happened to me out of the country. Then, I was so ill that I said, “Well, you have been very sick on another occasion? And I say, yes, I have been very ill. What brought you out from that depression? Well, being involved in the group." And I began to engage in the groups and do things there. And it was an incredible medicine but by bringing new ideas based on lived experiences in many groups, then brought me innumerable problems. But at the same time, I am very satisfied because at any time I am qualified to perform anything. Here and anywhere. I know how to organize something, and I know how to take it to the ultimate consequences.

¹ Festival de Claridad is a festival that has been held since 1973 to raise funds for the pro-independence weekly newspaper Claridad. The festival holds concerts, offers among other typical meals and crafts sales and cultural events. It is a traditional meeting point for the Puerto Rican Left (Pálu Suárez, 1992).
Francisco, who was the leader of the most recent community struggle in Cidra, traces his commitment to the community because of his parent's teaching and modeling of family values of solidarity and cooperation. Francisco reflected on his childhood and his father’s influence. Public servants in a small community not only are regarded as people that serve but also they represent a resource to the community, and they are consulted in a myriad of situations. Francisco invokes the figure of his father as a helper of the community:

My childhood was an ordinary childhood. Good parents. Parents who taught good values to you and to struggle with the communities. Because my dad was dedicated to public service and hence, he helped many communities in his work as a public health inspector. Also, known as Paco Pérez “El Sanidad.”

And my development, I finished my high school. Then, I worked in my father's business. Later I went to work at private companies, and I was working over 22 years in a company always supervising 24 persons. Sometimes 30 people as a supervisor of a production department. Until today that I resigned from that company, and I dedicate to elder care with my wife.

Male became a member of Despertar Cidreño just two years ago. He became involved with Despertar Cidreño through the struggle in his community and was worried that a project to be developed near his community would contaminate Lake Cidra. Even though he knew about the environmental struggles and Comité Despertar Cidreño, it was not until the menace of contamination got closer to him that he reacted and became an activist. Male narrates the way his involvement in the environmental struggle started:

Well. This question of the environmental struggle already was bothering me, this issue of drainage systems, overruns and bad smells from the Lake. Now that was bothering me. Until the case of the boiled cadavers took place here in the 172 entering Cidra. When I found out, it was Freddie who alerted me about that. That that was what they planned to throw in the sewer system, as I said with this problem that we have plus that contamination that they are going to throw, so what we have that do. We have to activate. And I went with him. Continued distributing flyers and going to the houses, talking to people about how it was going to affect us. A good group was formed.
We protested, talked with the municipality and the people that were not in agreement in that it would not be made. And thank God there we entered in full, and we could fight and win. And then I felt something more for the environment. To see that it was clean, that not so many trees were destroyed, that the water is clean. That is, that the things if they are done, are done in order as should be. Not the things like they were doing carelessly.

Like many members of Despertar Cidreño, Male recounts how nature provided the entertainment during his childhood and that an early connection with nature was made. He talks about the kids of today not having that opportunity. He says:

Well, but the best of that time was that despite there were few toys, the food was not... but never was missing. Thank God, at home, we are fourteen. Never we missed the food. Always we had it. We were not the best dressed, but always we had something to wear. My dad and my mom took charge of that.

The one that didn’t study was because didn’t want. But truly, my childhood, my youth out there was good. I think that I enjoyed life very well. Um, we were always active. Not like the boys now that they get to the bedroom, pick up a computer and don't go out to catch the sun. They do not know what is running around and look among the grass, climbing shrubs, trees and eat a guava.

The reflection on the experience and the recognition that he had a valuable knowledge validated his learning and gave him the confidence to teach others. Male uses his street-smart abilities to teach about the environment. He sees himself teaching the children about his experiences in life:

Well, right now so there are many people that with me...; one says to me: “Look, stop that, don’t go into that this is a matter of politics.” And what I tell them is that this is a question of environment this is the environment. And I explain to them to the extent I understand what I can explain. And many people say "Yes, look, is true, you are right. We need to keep the environment around as much as possible." Right now, it is known that perhaps out of five persons, four are going to have cancer. And this is things that come from water, food, the environment.

Um, so many illnesses that we did not have earlier that we have now, and it is from what we are eating. The poison they are spraying to plants. Therefore, we are eating all of that. When I was growing up, we did not have that. Had to wait a year for the chicken, a year for the taro and what I say to the parents of this time that is what I say to many, go, teach
your children to eat healthy, to eat homemade. And that is it, teach them that the tree, the plant that is growing up we must take care of it because it is like us. Like our children, if we do not take care of plants is as if we were not caring for our children.

Margarita expressed that she learned in the “university of life”, underlining the validity of her informal learning processes:

But. I sincerely say that sixth grade that I studied, for me I consider it a University. I have learned in life because all of this helped me to be a better human being. And with the little, we learned, we have lived all life and thanks, God, that we have had that opportunity to do things with little schooling, but that has helped us very much until today. For that part, it was so important that our parents did not limit us to what could not be done. However, with all their struggles, they helped us. Because we were ten brothers and sisters. And the ten brothers, all, all of us could study.

Margarita mentioned that among the experiences that have impacted her life as an environmental and community activist were threats to her physical integrity. She related how denouncing the environmental problems in the community irritated the people she accused of acting against the environment and the health of the neighborhood. Her voice tone becomes tremulous as she tells this story:

Look, I will give three. For example, once we are going to request permissions of a boy who was sick within the community with the problem of battery acids. I am waiting for the person that's going to take me to Aibonito, and a neighbor comes down and tells me, "Look, Margarita, be careful because they are going to kill you." He said to me at that moment. I explain to him, I say, "Look, but if they are going to kill me, you have to tell me, then I can take care of myself, actually." He would not say who the person was. That was once. Next, one night I come from the catechism, around 9:00 in the evening, close to my house, two cars turned the lights off and fired five shots into the air. That happened to me.

Once again, I come this way near my house too; some youngsters also threatened me. So, I have received several threats within the work like..., but that has not limited me nor gave me fear. Because I know that I am not, I was not doing anything wrong at that time. Everything was to follow God's justice with those most in need. That was the purpose.

Dealing with conflicts in the community appeared in the interviews in several forms.

Some of the disputes were with persons in the community who hold the ideas and explanations
of the dominant political parties or the government authorities. Usually, these individuals accused the community leaders involved in the environmental struggles of being Communists or “independentistas” (pro-independence for Puerto Rico activists).

Rosaura described this type of conflict in the community that was used by the politicians and government authorities to try to weaken support for the community struggles. This kind of accusation by associating community environmental struggles with subversion and even terrorism has been well played by opponents of the environmental social movement. She said:

Well, in terms of negative experiences, I believe they do not exist. Because what one can find in that work that one does can be opposition. For example, that they say to us, Communists. What was another word they used? Subversive. It was the word also, and much contradiction with the family. With some members of the family, of the community. However, that became an asset because there were other people in the communities that supported us.

One of the aspects that have affected the participation of people in the environmental social movement is retaliation and isolation that can occur when they assume a militant stance toward environmental issues. In the case of Margarita there were threats; in the situation of Don Leo it was the isolation and loss of leadership within the community. For other members, there have been arrests and accusations. Margarita, Paula, and Rosaura all stated that the Christian faith and the solidarity of the group were determining factors to lead them to maintain their participation and permanence in the group.

Don Leo indicated in his interview that he suffered persecution and was ostracized in the community because of his involvement in Comité Despertar Cidreño. He expressed that this experienced impacted him even later after he emigrated to the United States. Moreover, he returned to Puerto Rico in 2016 and took this experience as learning that motivated to him to participate in the local community rather becoming involved again in Despertar Cidreño:
Um, my personal goals are to join the community again. Doing the same thing, but doing it in another way. I had all the time to analyze: why things were not moving forward? Why things became stagnant? Why did people not cooperate? I had a lot of time that I was not using it at all. And I dedicated it to say well, why this is not functioning? Or why this has so much…, or spend so much work to do things?

Hence it arises, I think a method of doing some things. I was very glad that the committee activated again. And at some point, within the plans that I have in the short term, would be that the community participated again as it was before the activities of the committee. And gradually return to the communities. I would like to go back to the communities and work in the communities as is it being done now. But try to seize, search, and capture more people for the struggle, so…, other people, join. And then the movement continues to move forward.

Don Leo’s opinion regarding the future of the group contrasts with the views of other members of the group expressed in the interviews. For example, Male understands that in the future the committee will remain active and what is needed is to recruit young people who ensure the existence and activity of the group in the future.

Male explained his vision of the group’s future and a new reality he perceives regarding reconnecting with the land through agriculture.

Eliezer: How you see or where you see Despertar Cidreño organization in the coming years? Three, five, ten years. Where do you see the group?

Male: Well. I actually believe we need, to inject new blood, as they say. That more people join… that’s why I speak to youth to go attracting them. That young person are who are entering. To interest them in making what many towns are doing, for example, with agriculture. Young persons are those who are beginning to lift agriculture. In Puerto Rico, those things are happening in many municipalities. That is good. That topic is not dealt in Cidra. We in Despertar Cidreño already are mature persons, with enthusiasm, energy. There is health still. If we can recruit more people, that join the group. Young people who commit to the environment, commit to the country that would indeed be the best in the world. So, I will not say 5, 10, 15 years. I would say that they would be many years. Countless years because in some towns is being done. Agriculture is rising, and it is the young people. Because youth dictates the way, they are the future.

On the other hand, for others, the organization’s activity has been continuous, although the frequency of the meetings and publications has decreased. Patria explains that since the
activity of the members develops from their communities, the presence of Despertar Cidreño is manifested in a variety of forms that do not necessarily reflect in more meetings and publications (Personal Communication, February 25, 2016). In recent meetings of the group, some strategies have been discussed for recruiting new members such as the use of social networks like Facebook and WhatsApp and cultivating closer relationships with young people interested in the protection of the environment.

Research Questions Answers and Learnings

This autoethnographic research combined the personal experience in the environmental social movement in Cidra through the narrative of the researcher with individual interviews and a focus group with Comité Despertar Cidreño participants. The study had four research questions: (1) What sort of learning occurs in a social movement and how does this learning align with Freire’s popular education conceptual framework? (2) How do participants in the environmental social movement produce knowledge? (3) How do participants become aware of their knowledge? (4) How does incidental learning occur?

What sort of learning occurs in a social movement and how does this learning align with Freire’s popular education conceptual framework? Three different types of learning were identified. The first kind of learning is incidental learning. This form of learning takes place when there is no previous intent of learning (Schugurensky, 2000). Much of the learning experiences that emerged came to the minds of the interviewees when they were asked about their experiences in the environmental struggles in Cidra.
One of the fundamental tenets of Freire’s model of popular education is the reflection on practice, to start from the experiences of the participants and develop a process of critical literacy or conscientization. One of the learning forms emerged in workshops about women’s participation and connection with nature. Participants narrated experiences of healing that took place while conducting workshops geared to develop awareness of connectedness with nature. The objectives of these workshops were oriented to generate enthusiasm and to share inspirational learnings. Participants of the workshops narrated that they learned by participating and observing how the workshops were done, and then they replicated them in their respective communities.

During the interviews, participants expressed the contributions of the popular education approach, affirming the validation of the knowledge acquired through experience. The participants highlighted the participation of their communities, presenting their collective research about environmental and social issues in the foundational assembly of Comité Despertar Cidreño. They revealed how the popular education framework approach based on the philosophy of Paulo Freire impacted the development of the environmental social movement in Cidra. Through a participatory approach, people in the communities became engaged in participatory action research. Since the preparatory meetings and the founding assembly of Despertar Cidreño, participants applied the principles of PAR, investigating their community’s environmental issues.

Each person interested in the social and environmental transformation of the community oversaw meeting with the members of his community to determine the topics. Margarita, Rosaura, Paula, and Don Leo in their interviews mentioned that through participation in the assemblies and meetings before the foundation of Comité Despertar Cidreño, they had the
opportunity to go over the environmental and social problems with the people in their communities.

Another kind of learning that emerged from the interviews was the internalization of values and attitudes that were expressed in the moments when members and sympathizers narrated how they were exposed to different social environments, for example, when they participated with atheists in the civil disobedience activities against the Navy in the island of Vieques. This learning which Schugurensky (2000) calls socialization, emerges through a process of retrospective recognition. Davico described examples of them in the story about his participation in the struggle of Vieques and how he learned about solidarity and working with people of different Christian denominations and atheists.

Self-directed learning emerged during the interviews as a form of learning when participants described how the struggle compelled them to learn to debate, intervene, or teach. Through the interviews, they explained how they were forced by the circumstances to study and prepare for the challenges posed by the environmental struggle.

Either to be able to participate in a public hearing or to explain an environmental problem to the community, the members of Despertar Cidreno had to prepare and learn about the environmental issues or how to conduct workshops that addressed the educational needs of each community. Patria and Francisco shared how they learned when they needed to participate in public hearings about a territorial development plan and the chemical hydrolysis plant to dissolve human corpses. Don Leo shared how he discovered that he had a talent for graphic art when he started painting and making banners for the activities of Despertar Cidreño. He revealed in the interview that he did not even know he had an aptitude for art.
The connection to the land, another salient theme, was an element that motivated most of the participants to take part in the environmental social movement. The experiences of growing up in the countryside, working in agriculture, helped to develop an early attachment to the land that was revealed when participants were asked about the experiences that led them to develop enthusiasm and acquire an awareness of the environmental issues and struggles that needed to be held.

In the interviews, the cultural identity element was also an outstanding theme. As part of that process, people in the community had the chance to learn more about the history and culture of their neighborhoods and Puerto Rico. Through the reflection on this theme, the community and the committee decided to incorporate traditional music and dances along with the Puerto Rican flag into the activities.

Figure 9. Children holding banner and flag at first planting of trees near Cidra’s landfill, April 17, 1988. Photo courtesy of Rosita Guzmán, Comité Despertar Cidreño.

Many activities were enlivened by the Puerto Rican country music troubadour Tuto Sierra, who in his improvised songs talked about the problems of contamination in Cidra Lake and the pollution and problems of each community. The children of Barrio Arenas danced
bomba and plena, Afro-Caribbean rhythms, and dressed in the corresponding traditional costumes at the group's tree planting activities. Moreover, the parade that was held at the beginning of each tree planting was presided over by children carrying the Puerto Rican flag.

Another emerging topic connected to the framework of popular education is the example of the struggles in the Vista Monte community, which inspired other communities in Cidra to activate and participate in the community struggle for a better environment. One of the elements of the framework of Freire’s popular education is that the people, no matter their level of formal education, have an experience and knowledge of their reality. When they developed awareness of their situation and recognized themselves as part of a unique culture, they could understand the need for joining other people and communities and see themselves as capable of transforming reality.

Civil disobedience accentuated self-determination rights of the communities, according to the participants. Many times in the interviews, the topic arose of how politicians and powerful people in Cidra made decisions without the community having the opportunity to decide if they want companies that pollute the environment to be established in their neighborhood.

Usually, participation is given only every four years in the general elections when Puerto Ricans can elect their mayors, assemblypersons, representatives and senators, and the governor. During that brief period of approximately six months, the rulers or future rulers listen to people's views on community affairs. Civil disobedience was seen as an act of democratic participation to express the will of the community.

**How do participants in the environmental social movement produce knowledge?**

This study suggests that it is through the participation and mobilization in environmental
struggles. We can observe through the participants’ interviews and recounted experiences that different types of knowledge were generated. In the stories of participants in Cidra’s environmental social movement, we attest to the production of knowledge by participating in the community struggles. Participants in the environmental social movement expressed in the interviews many instances of knowledge production. Furthermore, through struggling, dealing with the government bureaucracy, and experiencing the submissiveness of government officials to the rich and powerful, participants of the movement were led to generate knowledge about the social and political situation of Puerto Rico. Chan, one of the interviewees and leaders in the struggle to close Cidra’s landfill, expressed that she knew that the fight was uphill because behind the operation of the landfill were “pejes gordos” (fat fishes), referring to the wealthy and powerful.

The practices of knowledge are essential components of creativity and the daily practice of social movements (Casas-Cortés et al., 2008). The concept of knowledge practices aims to escape the abstract aspect commonly linked with knowledge. According to Casas-Cortés et al. (2008), “We will be able to engage with movements not simply as objects to be explained by the distanced analyst, but as lively actors producing their own explanations and knowledges” (p. 21).

**How do participants become aware of their knowledge?** The interviews and the narratives showed that the popular education framework and the PAR approach to researching the social and natural environment situated learning in the participants experiences. The essential paths that led participants to become aware of their knowledge were through reflection on their experience, practice, and retrospective cognition guided by the questions about their experience in the environmental movement.
How does this learning occur? One of the results of the research interviews and narrative was that incidental learning was a predominant way of learning. Incidental learning is defined by Schugurensky (2000) as learning that takes place when the learner had no previous intention of learning out of an experience but after the experience realizes that some learning has taken place. While Marsick and Watkins (2001) define incidental learning as the side effect of another activity: “Incidental learning is defined as a byproduct of some other activity, such as task accomplishment, interpersonal interaction, sensing the organizational culture, trial-and-error experimentation, or even formal learning” (p. 25).

Marsick and Watkins (2001) underline that incidental learning is unplanned and unexpected. They highlight three requirements to improve this kind of learning: critical reflection to make tacit knowledge and beliefs appear, encouragement of learner initiative to identify possibilities and to learn new skills to carry out solutions, and creativity to foster a broader choice of options.

If we start from the definitions of incidental learning of Schugurensky (2000) as well Marsick and Watkins (2001), we see that they have in common a description of incidental learning as one that is not planned or intentional. Instead, it is the unanticipated product of an experience in which the person participates. In all the interviews and autoethnographic narrative we hear participants tell about their experiences from children to adults and in the community and environmental struggles. These experiences were not part of a formal education program but emerged in participant’s everyday life.

Reflections on practice and experience promulgated within the popular education framework as developed by Freire emerged as a fundamental element to mobilize the community
based on the knowledge of the natural and social reality. Reflection on experiences in the community and environmental movement that surfaced when answering the questions in the interviews led participants to express learnings and knowledge production. These learnings include the discovery of talents in art, painting, and dance.

Organizational learning experiences such as conducting a meeting, planning an agenda, organizing and leading a workshop, and testifying in a public hearing are examples of learning that took place in the environmental social movement struggles. Likewise, they learned how to express the characteristics of the environment, names, and uses of medicinal plants through drawings, songs, and artifacts. The participants expressed learning about the body and health care. Additionally, participants learned about socio-political aspects identifying the anti-democratic practices of the government and the alliance between economic power and political power.

Finally, the research shows a variety of learning experiences that can mostly be defined as incidental and that lead us to suggest that learning primarily takes the form of incidental learning in social movements. This modality of learning is significant and requires that social movements pay attention to facilitate and develop spaces for reflection on experience and practice. This reflection will provide tools for learning to be enhanced and systematized. Learning can be further improved by providing additional tools for research and analysis.

Chapter Summary

This chapter began with an autobiographical narrative that describes the researcher’s life experiences from childhood to adulthood. The narrative describes the events that influenced me to develop a strong attachment to nature and a passion for social justice. The individual
interviews and the collective interviews with members and collaborators of Comité Despertar Cidreño were analyzed. The analysis of the interviews reveals that the participants applied the principles of participatory action research in their communities and the process prior to the founding of the group. The stories of the participants in their communities highlighted how the knowledge of the environmental issues served as the basis for organizing struggles aimed at transforming the community.

The role of the connection with the land since childhood was emphasized as one of the motivating factors to get involved in the struggle to defend the environment. One of the elements that was stressed in the interviews was the role of spirituality in motivating participation and serving as emotional and spiritual support during difficult times. Through the interviews emerged how the experience and needs of the environmental struggle led the participants to learn from the experience and also to study and prepare for issues related to the environment in order to testify in public hearings and to defend community claims against government officials.

The topics that emerged after the codification of the interviews were popular education, knowledge production, reflection and knowledge about nature, learning about society, reflection, learning about organizing and developing actions, learning about popular education, incidental learning, forms of learning, spirituality, self-confidence, and value of knowledge acquired from life experiences.

Participants in the interviews manifested that the atmosphere of participation and leadership development from the ground up increased their self-confidence even though they did not have college degrees, and they believed they had not only influence in their communities but also the environmental movement of Puerto Rico. Consequently, the development of training and
courses on the methodology of popular education increased the dissemination of popular education tools in various struggles and the country’s institutions. Interview questions about the experiences of the participants led to a reflection process, which developed awareness among respondents of the learning of which they were not aware.
CHAPTER 6

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

Disculpe el amo si le interrumpo, pero en el recibidor hay un par de pobres que preguntan
insistentemente por usted. No piden limosnas, no... Ni venden alfombras de lana, tampoco
elefantes de ébano. Son pobres que no tienen nada de nada. No entendi muy bien sin nada que
vender o nada que perder, pero por lo que parece tiene usted alguna cosa que les pertenece.
¿Quiere que les diga que el señor salió...? ¿Que vuelvan mañana, en horas de visita...? O mejor
les digo como el señor dice: ¿Santa Rita, Rita, Rita, lo que se da, no se quita? Disculpe el señor,
se nos llenó de pobres el recibidor y no paran de llegar, desde la retaguardia, por tierra y por mar.
(Serrat, 2014)

[Sorry master if I interrupt you, but in the entrance hall there are a couple of poor who insistently
ask for you. They do not ask for handouts, no... Or sell wool carpets, neither ebony elephants.
They are poor people who have nothing at all. I did not understand very well without anything to
sell or nothing to lose, but it seems you have something that belongs to them. Do you want me to
tell them that the Lord went out...? To come again tomorrow, during visiting hours…? Or better
yet, tell them as the master says: Santa Rita, Rita, Rita, that which is given, it is not taken away”?
Excuse me, Sir, the lobby has filled with the poor, and they do not stop arriving, from the rear,
by land, and by the sea.]

Participation and Action Research

This autoethnography narrates how the participants produced knowledge and learned in
an environmental social movement that utilized the popular education framework as developed
by Paulo Freire. Participation in research is one of the pillars of the popular education framework
that Paulo Freire developed. Gaventa (1991) views PAR objectives as twofold: PAR is viewed
“not only as a means of creating knowledge; it is simultaneously tool for the education and
development of consciousness as well as mobilization for action” (pp. 121-122).

Gaventa quotes Paulo Freire observation: “I have to use methods for investigation which
involve the people of the area being studied as researchers; they should take part in the
investigation themselves and not serve as the passive objects of the study” (as cited in Gaventa, 1991, p. 121).

When we began the environmental fight in Cidra approximately in 1986, the people who joined community groups and Despertar Cidreño Committee did not have the image that people were accustomed to seeing in political and social organizations. Many of these people were humble, ordinary working people. Their form of dressing and speaking was very different from leaders of progressive movements that were rather young and middle-aged people who were university students, teachers, or college professors. I remember an anecdote that may illustrate stereotypes that permeate even in progressive organizations. One day I was walking through Cidra’s town square and met an acquaintance of a progressive political group. He said, "It has been a while I do not see you, but I have been told that you walk around with some old housewives up and down making protests,"immediately laughed. By his demeanor, I interpreted that he belittled the struggle taking place in Cidra. I responded, “Yes, we are fighting with communities against environmental pollution.”

That afternoon I began to think about what my friend told me. Incidentally, I talked the same day with a homeless person who came up to me to speak about their problems and encourage me to continue in the struggle for the environment in Cidra. I thought that the comment on the group of old women in addition to the sarcastic aspect pointed to a more profound theme. The traditional images of social struggles have pictures of young people, militants, dressed in blue jeans, khaki shirts, and scarves. They appear marching in groups behind banners with raised fists and singing slogans and sometimes confronting police. Some
may belong to political or progressive movements and have study groups where members read and discuss the works of Marxist classics.

Usually, their conversations were nuanced with philosophical and sociological concepts that are distinct from daily life conversations. Somehow these differences between Left political activists and ordinary people most likely led my friend to think that the environmental social movement that was developing in Cidra was not what he expected of a progressive social movement.

Through this study, I have been able to explore how participation and dialogue have promoted the appearance of new social actors who had been silenced for a long time. As Orlando Fals-Borda (1986) says, “Working silently for twenty years, like ants building their nests, progressive social movements have returned to make another significant breakthrough to become historical subjects at the universal level” (p. 76).

Incidental Learning

One of the central themes of the study is how incidental learning took place. It follows from the interviews and autoethnographic narrative that the environmental social movement catalyzed learning experiences when the people started mobilizing to deal with environmental problems. These learning experiences were not previously planned, but after the experiences, the participants became aware that learning had taken place.

Through the interviews, we observe that informal learning happened on many occasions fortuitously, but it does not demerit its significance. It may be considered very basic to identify the powerful in collusion with the government as responsible for the unfair and deplorable
situation in the communities affected by contamination, such as Barrio Arenas near the Cidra Landfill. However, it was incidental learning that took place as the people in the community visited government officials, who refused to solve their problem. As Chan said in the interview, they were the “pejes gordos” (fat fish) who colluded with government to keep the community sick. They learned that they needed to generate a strong force to transform the situation of the community. This study implies that action and mobilization create opportunities for learning and production of knowledge that can be turned into a legacy when it is shared and systematized.

Implications of Findings

The first finding of this research is that a large number of participants in this study declared that they learned to love the land and nature since they were children, mostly inspired by their parents who took them to the farm to work in agriculture. The awareness of this learning was triggered by the questions asked during interviews that elicited what Schugurensky (2000) calls “retrospective recognition.” This type of informal learning is categorized as socialization. Socialization alludes “to the internalization of values, attitudes, behaviors, skills, etc. that occur during everyday life. Not only we have no a priori intention of acquiring them, but we are not aware that we learned something” (Schugurensky, 2000, p. 4).

Some implications that can be obtained from this finding are twofold. First, people who are interested in participating in the environmental social movement have had significant and rewarding experiences since they were children. The environmental social movement should pay attention to providing children with nature activities that “awaken enthusiasm, focus attention and [provide] direct experience” (Cornell, 1989, p. 15). Second, to develop awareness of learning and strengthening self-reliance, reflection on experiences and practice should be stimulated to
take place periodically in the movement. Researchers in universities can incorporate these in the community and social movements to contribute in implementing participatory research. In this direction, we can explore the possibilities of collaboration and interaction between the academy and the environmental social movement. Furthermore, universities can facilitate the participation of activists in research courses oriented explicitly to participatory community research.

Another finding that emerged from the study is the recognition that experiential knowledge is as significant as knowledge accepted in academic circles. Experiences, stories, culture, traditions ideologies, and forms of expertise that people develop through their life histories are knowledge (Casas-Cortés, 2008). The framework of popular education inspired by Freire underlines the point that people and movements produce knowledge. The people in the communities and the environmental social movement generated knowledge as it follows from the interviews in which they described their experiences in dealing with community and environmental issues. The practice of the members of Despertar Cidreño generated not only knowledge and learning but also valuable research, as Choudry (2014) describes:

> Many people see activism as practice, and education, theory and research as something generated elsewhere. Yet through their practices, activists actually generate various forms of sophisticated knowledge, and engage in significant learning and research in the course of their activism. (p. 483)

Through the autoethnographic narrative and the interviews with the participants of the environmental and community struggles in Cidra, Puerto Rico, we observed the production of knowledge ranging from the skills and abilities necessary to organize the struggles to the experience and knowledge of their natural environment. The study showed that the use of PAR as a tool for research and social transformation created an environment of confidence and conditions for the generation of knowledge in the environmental social movement. An
implication that can be drawn from this finding is that the popular education framework inspired by Freire and PAR contributed to the process of knowledge production in Comité Despertar Cidreño.

Findings regarding how the participants became aware of their knowledge emerged through the interviews. Participants became aware of their knowledge mostly when they reflected on their experiences and practice. The questions in the individual interviews made the participants reflect on their experiences and to look at the memories that impacted their lives both personally and as members of the movement.

While writing this last part of the study, Comité Despertar Cidreño observed its thirtieth anniversary on May 20, 2017, with a special liturgy and dinner and celebrated the accomplishments of the environmental movement in Cidra with a heartfelt posthumous homage to the collaborators, members, and leaders who have passed away. Memories and images came to my mind of many struggles, stories, and anecdotes that I have lived and shared in the group.

During and after the interviews I was reflecting on which ways this environmental social movement was unlike other organizations and environmental movements in Puerto Rico and other countries. For example, environmental struggles in many of these movements were organized and directed by centralized organizations with full-time staff, including scientists, organizers, and office staff among others. They usually started from a scientific and social analysis to develop their programs and strategies. On the contrary, Committee Despertar Cidreño arose from extensive conversations and dialogues about the everyday situations that people living in the communities experience. The nature and scope of the group were developed from discussions and exchanges with neighbors and participants. Therefore, the environmental
struggle of communities was forged not through the abstract and scientific analysis of the environment but rather was built taking into account the experience and knowledge of the people who participated in the dialogues and conversations.

The emphasis that Freire’s (1982) popular education framework puts in the lived experience of the participants led us to implement participatory action research. It was a natural consequence guided by the fundamental elements of the theory of Freire. None of the participants who formed part of the experience of Comite Despertar Cidreno called it PAR. In the practice of investigating the issues and topics relevant to the community, a PAR process was developed.

At the beginning of this chapter, I started with a vignette of a Joan Manuel Serrat\(^1\) song that speaks of a group of poor people who intrude on the house of the master, and his steward asks him how to dismiss them with a harmless excuse. It reminds me of the many times we had meetings with government officials, business owners, and lawyers who sought with ridiculous reasons to disregard community claims, even on some occasions openly despising the intellectual capacity of the residents of the community because they did not have college degrees. Yet they were the authorities on the issues. However, the people in the community using their wisdom gained through experience did not give up on making their claims.

On many occasions when we went to government offices the directors could not hide their annoyed face. A community member recently told me that he went to the planning office at the Municipality of Cidra to file a complaint about an illegal construction that the municipality was performing on the shores of Lake Cidra. The administrator told him that they did not need

\(^1\)A renowned Catalanian singer.
permissions because the municipality was autonomous, trying to dismiss his claim. The community member replied, "Then why private businesses have to apply for many permits as well as approval from environmental agencies to build?" The official replied that he did not know the administrative process, and the community member responded, "Ah, because you are the one who knows everything, explain it to me so that I can understand the process to follow..." (Personal Communication, November 29, 2015).

Many members of the environmental social movement faced situations like this, relying on their experience and wisdom to counteract the ideology that presents social and ecological problems as unchangeable. In this way, people in the environmental social movement developed what some researchers of social movements have called a counter-narrative that faces the narrative that dominant classes use to justify their stronghold. According to Haluza-DeLay (2007), citing Ryan (2005), framing processes in social movements generate lived experiences against dominant hegemony.

Recommendations

Concerning learning in environmental social movements, it is important to point out that learning is mostly incidental and that, to be aware of it, participants in this process need to engage in a personal and collective reflection. In the case of this study, the interviews and focus group facilitated the reflection process by asking participants about their experiences in community and environmental struggles. While it is true that environmental social movements exhibit knowledge production as part of a process of informal learning (Casas-Cortés, 2008; Foley, 1999; Haluza-DeLay, 2007), this informality may lead generated knowledge to fade gradually, since there is no record of it. Reflection and documentation of these processes of
learning and knowledge construction should be included in the agenda of the environmental social movement.

In the case of Puerto Rico, few publications methodologically support education and learning processes in the area of environmental popular education, techniques, and group work. A second recommendation is to develop projects that produce and disseminate these materials that could be supported by universities.

Regarding the academy, it would be valuable to pay attention to informal and experiential learning by university departments and explore the creation of partnerships to support participatory action research in communities and social movements. According to researchers such as Haluza-DeLay (2007), a weakness of research about learning in social movements is that it has focused mainly on very involved activists, rather than ordinary people active in the environmental movement. This autoethnographic research has attempted to include in the study not only the perspective of the author, an environmental activist, but to add the view of rank-and-file members and collaborators of the environmental movement.

Further research could explore the role of spirituality in participation and informal learning in the environmental social movement. That topic emerged in the interviews since several participants in this study indicated that one of the motivations to become part of the environmental movement was caring for the Earth as a God-given gift and that participating in the struggle was a way of living their spirituality.

The fundamental aim of this study was telling the story of how the participants produced knowledge and learned in an environmental social movement that utilized the popular education framework as developed by Freire. Through the process of writing this dissertation, I have had
the opportunity to reflect on my practice as an educator and as an environmental activist. I have learned from the people of Cidra to persevere, understand the richness of our cultural heritage, and that social transformation begins with small steps at the community level. The research helped the participants to become aware of the learnings and knowledge they produced. I have learned from the university to do academic research and bring the people's experience to the academy. The voices of the people from Cidra and their stories will be heard through this study, and I hope they contribute to strengthening social movements’ educational processes.
REFERENCES


APPENDIX A

NOTES ON THE HISTORY OF ENVIRONMENTAL STRUGGLES IN CIDRA AND DESPERTAR CIDREÑO COMMITTEE FROM 1986 TO 2016
NOTES ON THE HISTORY OF ENVIRONMENTAL STRUGGLES IN CIDRA AND DESPERTAR CIDREÑO COMMITTEE FROM 1986 TO 2016

By Eliezer Colón-Rivera

Despertar Cidreño arises as an initiative of a group of people and Vista Monte residents Committee to continue the fight against the contamination of Cidra Lake and for a better quality of life for all Cidreños. The community of Vista Monte in 1986 waged an intense fight having to resort to defiance and civil disobedience, faced with the intervention of Puerto Rico police tactical force unit and defied an injunction from the Superior Court of Caguas to avoid contamination of their community. This environmental organization emerged inspired by the will and determination of Vista Monte community.

On May 14, 1987, a group of individuals and communities of Cidra met to organize a Committee of struggle and organization for the improvement of the quality of life in communities.

The objectives of Despertar Cidreño are:

1. To fight to improve the environment and the economic and social situation of communities in Cidra.

2. Strive to eradicate the pollution of Lake Cidra and the poor quality of water in Cidra and Puerto Rico.

3. Develop educational work among the people to create awareness regarding the need of organizing and mobilizing to achieve their goals.

4. Join forces with other groups and entities working in the direction of a better quality of life and social justice.
CHRONOLOGY OF EVENTS

1987

1. In the first edition of the newsletter, Despertar Cidreño, residents of various communities denounced many environmental problems. Sector Pagán of Montellano neighborhood residents denounced the dangerous condition of the road, neighbors near the road exit to Aguas Buenas organized a committee to deal with the problems caused by ENCO paints factory, the community of Santa Teresita neighbors denounced the issue of lack of sanitary sewage collection system.

2. September 1987 - residents of Parcelas Gándaras II demanded that sewage collection system is built for the community.

3. April 1, 1987 - Participation in public hearings before the natural resources' commission of the House of Representatives of Puerto Rico about Cidra Lake.

4. August 19, 1987 - Conference about contamination of Cidra Lake in the Cultural Center of Cidra. The attendance was estimated at more than one hundred people

5. October 3, 1987 - Large motorcade of Cidreños demanding cleaning and rescue of the Lake. The caravan traveled across diverse neighborhoods of Cidra requiring the cleaning and restoration of Cidra Lake.

6. October 15, 1987 - March to the Department of Natural Resources (DNR) and the Capitol in San Juan demanding solutions for the contamination problems of Cidra Lake. The protest march was presided by the banner “In defense of health and life” and participants shouting the slogan “for the right to health and life; we do not want pollution in Cidra.”
7. October 15, 1987 - March to the Department of Natural Resources (DNR) and the Capitol in San Juan demanding solutions for the contamination problems of Cidra Lake. The protest march was presided by the banner “In defense of health and life” and participants shouting the slogan “for the right to health and life; we do not want pollution in Cidra."

8. December 1987 - Barrio Arena's residents had meetings to organize to combat the problem of contamination that represents Cidra’s landfill. They point out issues with frequent fires, and many residents affected by respiratory and skin diseases.

9. October 1987 - Despertar Cidreño denounced that reports of the Environmental Quality Board (EQB) showed that there is a high concentration of toxic metals in Cidra Lake such as mercury, lead, zinc, copper, chromium, iron, silver, arsenic, selenium, and barium.

10. November 1, 1987 - Despertar Cidreño protested the anniversary celebration of the Popular Democratic Party held in the parking area of the Jesus María Freire Stadium in Cidra, demanding among other things the cleaning of Cidra Lake and closure of the landfill. The relocation of the Enco manufacturing paint factory to an industrial park and construction of sewerage systems in the communities of Parcelas Gándaras I and II, Santa Clara and Santa Teresita communities

11. December 28, 1987 - Fifteen residents of Barrio Arenas and members of Despertar Cidreño were arrested while they were in a demonstration that commenced a 4:00 a.m. blocking the entry of garbage trucks to the landfill.

1988

1. January 16, 1988 - More than one hundred Cidreños marched through the streets of the town denouncing the arrests at the landfill as an act of repression of the municipal government
culminating with a rally in the public square.

2. April 1988 - The second report of the EQB on Cidra Lake reflects a worsening of pollution in that body of water.

3. April 17, 1988 - First planting of trees under the slogan “Planting the Future” in a farm facing Cidra’s Landfill.

4. April 19, 1988 - Trial in the District Court of Cidra against the people arrested in December 1987 for blocking the entrance to the landfill. Prosecutor solicits the acquittal of charges against those arrested at the petition of the Mayor, Félix Agosto.

5. May 18, 1988 - Despertar Cidreño organized an educational activity about the Paloma Sabanera (Patagioenas inornata wetmorei) which has become a symbol of Cidra. At the beginning of the 1900s, the Paloma Sabanera already was very rare in 1936, the coastal forests where the Paloma Sabanera lived, so far had been cleared, and the bird was considered extinct. Fortunately, it was rediscovered in Cidra in 1963. Tallies in the decade of 1970, pointed out that were near 50 individuals, and that the main problems of the Sabanera were illegal hunting, the disturbance of their nesting areas and the theft of squabs Professor Raúl Pérez predicted that the pace of current destruction in 20 years would not be Sabaneras in Cidra.


7. November 15, 1988 - Neighbors at Road 172 km 7.6 denounced pollution caused by Gold Tec and Millipore companies.
1989

1. March 1989 - Despertar Cidreño denounced that Mayor Malavé and the Municipality of Cidra were violating environmental regulations on the management of the landfill.


4. October 4, 1989 - Despertar Cidreño protests before EQB headquarters in San Juan demanding that the agency take measures to stop contamination in Cidra Lake.

5. October 27, 1989 - Despertar Cidreño picketed the headquarters of the Aqueducts and Sewers Authority to denounce inaction and deception about contamination of Cidra Lake.

6. October 27, 1989 - During the night Despertar Cidreño held a vigil in silence at the Cidra’s City Hall denouncing the poor conditions of Cidra Lake.

7. November 8, 1989 - Despertar Cidreño and Cidra’s Cultural Center picketed the DNR and EQB for not controlling pollution, the cutting of trees and destruction of the Paloma Sabanera habitat.

1990

1. An aide of Governor Hernández Colon promised to start the cleaning of Cidra Lake in the summer of 1990.
2. March 2, 1990 - Committee Despertar Cidreño demanded the closure of Cidra’s landfill for being contaminated with toxic and dangerous waste. The group denounced that the health of residents near the landfill was being affected by the contaminants. Furthermore, the leachates from the landfill were reaching Cidra Lake through a creek which is born in the landfill and is a tributary of Rio La Plata. After the point where the stream flows into the river there is a pumping station that diverts water from the stream to Cidra Lake. This pollution endangers the health of the people of Cidra and people of the Capital of Puerto Rico, receiving water from this lake.

3. September 1990 - Despertar Cidreño denounced the plans to build several commercial centers that threaten the economy of the small businesses of Cidra and nature.

4. October 31, 1990 - Despertar Cidreño and Margarita denounced irregularities in the granting of permits to build a shopping mall in Barrio Montellano.

5. Neighbors of Barrio Arenas reject the construction of a ready-mix concrete plant dosing of concrete to the input of the community.

6. November 1990 - Despertar Cidreño made a public denounce that the commercial sponsoring of the tenth Festival of the Paloma Sabanera by Cidra’s Coca-Cola is a way to cover up the pollution that this company has caused to Cidra Lake.


8. December 28, 1990 - Vigil at La Fortaleza, Governor’s Mansion in San Juan demanding the restoration and cleaning of Cidra Lake.

1991


2. June and July 1991 - Despertar Cidreño made public the many fish kills taking place in Cidra Lake. Fish with bleeding ulcers in the head died convulsing in Sector Parcelas Gándaras II.


4. September 19, 1991 - Despertar Cidreño presented the results of laboratory analysis of water and sediment samples from the lake that showed contamination with selenium and other toxic metals around Parcelas Gándaras II where hundreds of fish with bleeding ulcers died.


7. September 26, 1991 - Communities of Cidra and Despertar Cidreño picketed the EQB denouncing inaction of the Agency about pollution of Cidra Lake with toxic metals.

8. September 24, 1991 - DNR announces the removal of water hyacinths, which covers 90% of the surface of the Cidra Lake.
9. October 31, 1991 - Despertar Cidreño presents results of laboratory analyses of livers from Cidra Lake fishes of samples obtained by the group. Results of sampling showed high concentrations of selenium, zinc, copper, arsenic, chromium, lead and mercury.

10. November 1, 1991 - Over a hundred people participated in a vigil for the cleaning and restoration of Cidra Lake, near the shore of the lake in Parcelas Gándaras II.

11. December 26, 1991 - Despertar Cidreño picketed the DNR, and the EQB and demanded the resignation of President of the Board for their inaction in the ecological crisis of Cidra Lake.

1992

1. January 3, 1992 - Despertar Cidreño refuted declarations of the EQB president explaining that the fish kills in the Lake were exclusively due to low levels of dissolved oxygen and not from toxic materials. A group of Cidra residents picketed the headquarters of the EQB.


3. March 4, 1992 - Despertar Cidreño points out that the construction of an industrial park in a 40 acres’ area at the Finca Cancio in Sector Certenejas will endanger the habitat of the Paloma Sabanera and pose potential dangers of contamination to Cidra Lake.

4. March 1992 - Despertar Cidreño denounced that the equipment acquired at the cost of $295,000 to remove the water hyacinths from the Lake is useless and that the equipment in use is machinery that the DNR already had.

5. October 19, 1992 - Despertar Cidreño made a public statement demanding that Mayor Malavé stop attributing as his accomplishment the partial cleaning of the Lake. The group declared that the partial cleaning was achieved due to the pressure the community and Despertar Cidreño.
1993


3. April 1993 - Despertar Cidreño picketed a press conference at Smith Kline Beecham pharmaceutical industry in Certenejas to oppose the construction of an industrial park in an area habitat of the Paloma Sabanera in Las Palmas, Certenejas ward.

4. April 27, 1993 - Neighbors of Barrio Beatriz denounced air and water contamination generated by Modine car radiator's factory.

1994


2. August 4, 1994 - Despertar Cidreño testifies in the public hearing for the expansion of the shopping center to be located in an area of 46.44 acres near the Road 173, km 1.6, in Barrio Montellano of Cidra. There were pending five consultations before the Puerto Rico’s Planning Board to build five shopping centers all over Cidra, specifically: project #93-44-00628-JPU Beatriz de Cidra. Project #93-44-0843-JPU, km 12.5 of the Bayamón (Sector Certenejas) Cidra. Project Campo Alegre s #93-44-0692-JPU at Barrio Bayamón (Sector Certenejas) of Cidra km 10.3 The project #93-44-0803-JPU in the urbanization Hacienda Sabanera of Barrio Bayamón (Sector Certenejas) of Cidra and the project that is seeking amendment #89-44-1115-JPU to be located at km 1.6 in Barrio Montellano of Cidra.
3. The committee call attention to the fact that the commercial space of these five projects exceeds 400,000 square feet for a town whose population is of 35,601 inhabitants in an area of 36.6 square miles. Despertar Cidreño affirmed that these projects are not economically viable and will have adverse environmental effects.

4. August 1994 - Seventh planting of trees “Planting the Future” on the farm of Juan Rolón, Barrio Montellano.

5. September 8, 1994 - Due to the deterioration of the primary drinking water reserves in the country, in particular, Cidra Lake, Despertar Cidreño Committee demanded from the Aqueducts and Sewers Authority (AAA) and the Governor of Puerto Rico Pedro Roselló González immediate attention to the critical situation of the reservoir. The sedimentation and pollution of this body of water reached dangerous levels compared with other Lakes. Some areas on the lake are full of sediments. The AAA and environmental agencies have abandoned Cidra Lake and did not perform any cleaning or restoration.

6. March 20, 1994 - Despertar Cidreño denounced that the latest count of Palomas Sabaneras (Patagioenas inornata wetmorei), an endangered species, showed that the number of Paloma Sabaneras that live in Cidra had declined significantly in areas in which traditionally there was a higher number of these birds. This decrease of the population within the Cidra area is linked to recent activities of deforestation taking place in the area. In the opinion of reliable sources, the number of Palomas Sabaneras in five representative stations totaled 117 individuals while in previous years the number ranged from 250 to 300 individuals. It seems that the birds have had to move to other areas in search of food and suitable habitats since the number of Palomas Sabaneras in nearby towns have maintained stably.
7. April 30, 1994 - Despertar Cidreño denounced that in recent weeks have increased the activities of deforestation and removal of vegetation cover in areas close to Cidra Lake.

8. Sixth Planting of Trees, Sembrando el Futuro (Planting the Future) in Santiago’s family farm Sector Meléndez, Río Abajo. Cidra.

1995

1. November 15, 1995-Picket line in front school Ana Jacoba Candelas to denounce the destruction of the forest and warn pollution problems that will bring the school community the construction of Road 7734.

2. A campaign to promote the concept of sustainable development in contrast with the prevalent model of economic growth of Puerto Rico and the municipality of Cidra.

3. Seventh planting of trees on the farm of Mr. Juan Rolón in Barrio Montellano of Cidra.

4. Denunciation of the illegal removal of asbestos for the construction of Berrios commercial center, air pollution by Cidra Metallic Caskets in Certenejas and planned destruction of the urban forest behind the Ana Jacoba Candelas High School in Cidra.

1996

1. January 1996 - Campaign to prevent the destruction of the forest located behind Ana Jacoba Candelas High School because of construction of the southern detours. Despertar Cidreño warns about the serious environmental problems that will be caused to the school and the community.

3. February 25, 1996 - Eighth planting of trees “Planting the Future” in Sector Melendez of Barrio Rio Abajo. The planting of trees represents a way to defend life and to denounce the destruction of forests and nature in Cidra and the country.

4. March 5, 1996 - Students and teachers protested at Ana Jacoba Candelas High School for the destruction of the woods behind the school carried out by the Puerto Rico’s Road Authority.

5. February 1996 – The Roads Authority used heavy machinery to destroy a significant number of trees damaging a creek behind Ana Jacoba Candelas High School. At the same time, neighbors of the intersection of Road 172 and 734 (detour 7733) led by Rosa Rodríguez picketed Cidra’s City Hall at 12:00 noon protesting the lack of action of Mayor Malavé given the considerable amount of serious accidents that have occurred on the road just recently inaugurated.

6. March 21, 1996 - Despertar Cidreño actively participates in the first public hearing on the Plan de Ordenamiento Territorial (Municipal Reform Act) denouncing the restrictions and limitations to the participation of the community.

7. April 22, 1996 – Vigil on Earth Day, a joint press release of communities of Dorado and Cidra stated that it was motivated by the preservation of the health and harmony of our communities and all Puerto Rico. Two simultaneous vigils were held to present in an environment of prayer, reflection, and participation, all of what has been the continuous aggression and destruction of mother nature. During recent years, the citizens of Dorado and
Cidra have been impacted in their traditional way of living because of different projects that threaten the environment and health.

8. Barrio Montellano community leaders from Cidra denounced the proposal to establish a sub-regional shopping center with a capacity of 100,000 square feet and 720 parking spaces in the community. They exposed that the project was not adjusted to the economic and social reality of Cidra and exceeded the commercial demand in the area. Also, the development was not appropriate given the geographical, geological, environmental and hydrological characteristics of the place where it was intended to be located.

9. April 15, 1996 - Despertar Cidreño denounced that the EQB had incurred in irresponsible and negligent conduct in handling the severe problem of pollution with asbestos cement in Cidra. Hundreds of pounds of this carcinogenic material were scattered close to the community of Parcelas Gándaras II and intersections of Road 172 with 787 (construction site of Berrios Shopping Center) without taking protective measures.

10. May 19, 1996 - Don Salvador Morales and Eliezer Colón Rivera were accused of defamation by the owner of Cidra Metallic Caskets company. Despertar Cidreño published a newsletter describing the air pollution in the community of Don Salvador Morales and the emissions of carcinogens into the air coming from the paint and industrial solvents used in the manufacturing of metal coffins.

11. July 1, 1996 - Cidra District Court dismissed the charges of defamation against environmentalists Don Salvador Morales and Eliezer Colón Rivera.

12. October 16, 1996 - A vigil for the environment and life, was held in front Cidra City Hall and the participants marched to Ana Jacoba Candelas High School. The vigil was held against the
destruction of forests, deterioration of the Lake and environmental pollution in several communities.

13. October to December 1996 - Campaign against deforestation in the hydrographic basin of Cidra Lake.

1997

1. February 20, 1997 - Despertar Cidreño held a picket line, and demonstration near the Sabana bridge in Lake Cidra since the levels of the reservoir have lowered notably, and a big spot of grease could be seen from the high ground.

2. April 7, 1997 - Despertar Cidreño demanded participation in the Community Board of Cidra establish as part of Municipal Reform Law. Mayor Malavé ignored the request and appointed his followers to the board.

3. May 6, 1997 - The EQB announced a multi-million-dollar fine against Millipore Corporation located in Certenejas for emitting toxic fumes and depositing flammable residues and toxic waste in Cidra’s landfill.

4. May 26, 1997 - Participation in the dialogue of environmental groups convened by the Ecumenical Dialogue on National Reconciliation.


7. July 14, 1997 - A spill of diesel fuel occurred in the facilities of the Cidra’s Coca-Cola company. The spill gained access to Lake Cidra through a creek near the plant.

2000-2010

1. Active participation in the education and organization of various communities’ sectors to oppose to the construction of a detour and connector with the San Juan to Ponce Tollway that would entail problems of contamination, destruction of agricultural land, deforestation and water resources destruction.

2012-2013

1. 2012 to 2013 - Participation and support of Parcelas Gándaras I community in opposition to the chemical dissolution of human corpses plant that was intended to be established in the community, Road 172, in what was the “Anibal” hardware store. The community and Despertar Cidreño participated in public hearings and picketed the proposed facilities. The mobilization of the people made the General Office of Permits (OGPe) deny the license to operate such facilities.¹

2. June 2013 – Despertar Cidreño filed a complaint at EPA (Environmental Protection Agency) for pollution of a creek adjacent to Star Ready Mix, Road 734 of Barrio Arenas in Cidra.

   September 15, 2013-Despertar Cidreño denounced that an exotic plant, the water lettuce (*Pistia stratiotes*) native to South America and considered one of the worst weeds in the

tropical and subtropical regions of the world, has begun to grow rapidly on the surface of Lake Cidra, where it covers the area known as Puente de la Sabana. The president of Despertar Cidreño, Eliezer Colón Rivera, said that "these plants grow more rapidly in polluted waters that contain high levels of phosphates, nitrogen compounds and organic matter." ²

2014-2015

1. 2014 - Participation in public hearings and support of community Los Llanos of Barrio Ceiba neighborhood in Cidra, Puerto Rico opposing the construction of a cemetery. Residents of the area reported that the construction would cause ecological, environmental and health problems. Also, it will cause the destruction of a stream and a well located in the lower part of the construction area. The construction permit was denied.

2. January 2014 - Participation in public hearings and activities in opposition to the construction of Plaza Lago Mall in Cidra in conjunction with Margarita Center School of Special Education.

3. November 2015 - Participation in reporting and filing complaints at the EQB and DNR of Puerto Rico against the Municipality of Cidra and its mayor Javier Carrasquillo for the illegal construction and destruction of trees and habitat of the Paloma Sabanera near Road 172, km 13.5 close to the Lakeshore and Puente de La Sabana. The agency paralyzed the construction due to the lack of environmental permits for the project development.

---

1. The EQB issued an order to impose a fine of twenty-five thousand dollars to the Municipality of Cidra for violations of environmental laws and regulations and beginning the construction of a project on the banks of the Lake without proper environmental assessment and permits required by the Agency. These violations of the environmental laws go back to November 9 of 2015 when members of Despertar Cidreño observed heavy machinery removing soil and destroying trees on the shores of Cidra Lake. The construction of a road of more than 3 km entailed the destruction hundreds of trees among them Camasey shrubs that produce fruits that feed a variety of birds, among them Paloma Sabanera. In open violation of environmental laws and regulations, the Mayor of Cidra Javier Carrasquillo ordered the destruction and deforestation around Lake Cidra, km 13.5 of Road 172 near Puente de la Sabana. The construction generated pollution to the Lake since runoff water carried tons of sediment and machine's oil into the Lake, which is a source of drinking water. Despertar Cidreño filed complaints with the Environmental Quality Board (EQB) and the DNR on November 10, 2015. On November 17, two employees of the EQB inspected the project and found several violations of environmental laws and regulations. They ordered the municipality to stop the project. On January 13, 2016, the city tried to resume construction, and the EQB inspectors told the persons in charge that they were violating the law and risked the imposition of higher fines.

---

APPENDIX B

INDIVIDUAL INTERVIEW GUIDE
Individual Interview Guide
Research for dissertation: Learning in an Environmental Social Movement: Walking and Learning with The Poor

Time of interview: _______________________________________________________

Date: __________________________________________________________________

Place:  _________________________________________________________________

Interviewer: _____________________________________________________________

Participant:  _____________________________________________________________

Questions:

1. Can you tell me about how you got involved in community and /or environmental struggles? Describe the things made you to become involved.

2. Tell me about your experiences positives and negatives.

3. Looking back to your experiences, how do you think they influenced your life?

4. Think about the things you have learned. Describe the things others have learned from you

5. Tell me how you came to know Despertar Cidreño

6. What do you think is the legacy of your experience and learning for the next generations?

Closing: Thanks for participating in this interview. A pseudonym will be used instead of your name to protect your identity.

Probing questions:

Would you give me an example?

Can you elaborate on that idea?

Would you explain that further?

I am not sure I understand what you are saying.

Is there anything else?

Adapted from Creswell, 2013, p. 165.
Focus Group Interview Guide

Research for Dissertation: Learning in an Environmental Social Movement: Walking and Learning with the Poor

1. Think about your experiences participating in Comité Despertar Cidreño (El Comité). What comes to your mind?

2. Based on your experiences, what do you see as the contributions of El Comité to the improvement of the environment in Cidra?

3. What things you think you have learned working in El Comité. Can you tell how you learned them, like in school or in another way?

4. Think about what things could not be achieved individually but have been made possible through collective work. How this learning is shared.

5. Think about your beginnings in the group and today that you are still a member of the group. What you think you have contributed to the organization.

6. What you think the group has contributed to you.

7. Based on your experiences what things need be shared with environmental groups and the community that can improve the environmental social movement effectivity.
APPENDIX D

CIDRA LAKE