

To what extent does ecological management farming affect the agricultural culture in the Matanzas Province of Cuba?

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Introduction:

This study explores the country of Cuba, a small island in the Caribbean Sea located ninety miles south of Key West, Florida. Due to isolation policies, Cuba's agricultural sector lags far behind many industrialized countries, including the United States. Although the agriculture is not industrialized, isolation created a unique farming scene in Cuba.

With the fall of the Fulgencio Batista regime and the rise of the socialist party in 1959, the United States imposed an embargo on Cuba. This embargo, which

strengthened through the years after the rise of Fidel Castro, encompassed all imports and exports to and from Cuba. Through interviews with many people, they faulted the embargo for furthering the isolation of Cuba from all countries. They cited many countries not trading with Cuba because of worry that the United States would discontinue trade with them as well; therefore, the country relied on support for imports and exports from countries not actively trading with the United States. One of the countries heavily supporting Cuba was the Soviet Union. The USSR supplied fertilizers, herbicides, pesticides, and other cash crop requirements for Cuban farmers. Because of these chemicals, the Cuban economy relied on the export of cash crops to pay for the import of food for consumption. "In 1990 over 50% of Cuba's food came from imports."¹

When the Soviet Union fell in 1989, the Cuban way of life and economy was upended. Suddenly, the chemicals and aid provided by the USSR no longer fueled the Cuban agricultural economy; therefore, the Cuban food system was forced to evolve rapidly. Because the embargo from the United States was still in place, Cuba was left with virtually no other country to help feed the population. Throughout the 1990s, the Cuban food system changed drastically. No longer were they producing cash crops to export; the country began creating an ecological management agricultural system to feed its population.²

¹ Renee Kjartan, "Organic Farming and Urban Garden Revolution in Cuba." *Organic Consumers Association*, Accessed January 21, 2017, https://www.organicconsumers.org/old_articles/Organic/cubagarden.php.

² Renee Kjartan, "Organic Farming and Urban Garden Revolution in Cuba." *Organic Consumers Association*, Accessed January 21, 2017, https://www.organicconsumers.org/old_articles/Organic/cubagarden.php.

In the United States, many people support the organic food movement. Although there are many obstacles to a wholly organic food system, Cuba's model raises many questions about feeding the population without the use of harmful chemicals. Throughout this lack of chemicals, the ecological management system in Cuba has developed out of necessity, a stark contrast to the United States' wants for an agricultural system free of harmful chemicals.

Since the fall of the Soviet Union, the country has transformed vacant lots and former cash crop fields into food plots to provide food for its citizens. Due to a lack of money and food, the people rely on the food plots, animals, and ration books to sustain the family. These ration books allot rice, beans, bread, etc. for citizens at the state-owned stores. Although the ration books are to sustain the population, many Cubans find the food supplied by the government to only last a portion of the month, leaving the citizens to provide for their family through other means.³ One of the major farmers I met said, "When everybody has everything, nobody has anything."⁴

With the rise of tourism in Cuba, many Cuban farmers created a black market. This black market relies heavily on the tourists eating in the restaurants and hotels. Because of the demand for food, farmers are able to sell their best fruits and vegetables for a higher price to these entities and thus feed their families. The fruits and vegetables not sold on the black market are usually sold to the government, which are then sold to the people.⁵

³ Angelo Codevilla, "Playing Castro's Hunger Game," *Online Library of Law & Liberty*, January 07, 2015, <http://www.libertylawsite.org/2015/01/07/playing-castros-hunger-game/>.

⁴ In an interview conducted on May 22, 2017. Names are kept anonymous to protect anonymity.

⁵ Angelo Codevilla, "Playing Castro's Hunger Game," *Online Library of Law & Liberty*, January 07, 2015, <http://www.libertylawsite.org/2015/01/07/playing-castros-hunger-game/>.

The colonial period, like many areas of the world, entailed extensive use of cash crops on the soil. Since this period, the soil usage has transformed to mainly tobacco, fruits, and vegetables. Because of this stark contrast in use, farmers have and continue to encounter problems with the soil fertility. Due to the research gathered before the study and the experiences in the field, this study focuses on: “To what extent does ecological management farming affect the agricultural culture in the Matanzas Province of Cuba?”

Methodology

Setting:

The study occurred in the months of May, June, and July of 2017. My specific area of study was the Matanzas province of Cuba. This province is located in the center of the island, east of Havana. The two main cities studied were Matanzas and Quatroesquinas. Matanzas is a city located on the Bay of Matanzas. It is a coastal city with an economy dependent on the port. There is very little tourism in Matanzas, making it a perfect place to study the way of life most Cubans experience. During the summer, the temperature in Matanzas is around 90 degrees Fahrenheit, with high humidity. The city is one of the biggest in the province, yet many people still use farming as a way to sustain their family.

Quatresquinas is approximately 2 hours southeast of Matanzas.

Quatroesquinas translates to “four corners”. It is much smaller and is in the center of the island. Unlike Matanzas, this area experiences problems with rainfall and the stifling summer heat. The Quatroesquinas area holds many more farming families,

due to its small size. Many of the crops grown in and around this town are tobacco, pineapple, and mango. These crops are either sold to or grown by the government.

Data Collection:

Data was collected through twenty interviews. The interviews focused on farmers and people with extensive knowledge about the farming and food system in Cuba. Connections were made through the seminary in Matanzas Cuba. Through connections in the seminary, I was able to create relationships and interview people connected to agriculture. These relationships with people were very important in acquiring accurate responses through this qualitative research. Although these interviews were more of a conversation, the following questions were asked in Spanish:

- What is your involvement on this farm?
- What do you do in the day-to-day life of the farm?
- What is your primary job?
- Why did you begin farming?
- When did you begin farming?
- Does this farm use pesticides or chemicals?
- What does this farm use for the soil?
- Were you alive when the Soviet Union Fell? If so, what did that do to your food supply?
- Do you enjoy spending time farming?
- Do you use an irrigation system here?

- What types of crops are usually grown here?
- Would you rather have chemicals and pesticides to make things easier?
- Do you feel like there are problems with the food system? If so, what are they?
- Do you believe this farm is organic?
- What would you change, if you could, about this farm?
- What would you change about the food system?
- Where does your food come from?
- Do you eat the food coming out of this farm?
- What happens to the products of this farm?
- Who works on this farm besides you?
- Do you have a love for the land?

Although these questions are the questions asked to most interviewees, other follow up questions were asked in reference to their farm. Fourteen of the interviews were about specific farms, while the other six were with people with extensive knowledge about the food system as a whole.

In addition to interviews, due to my integration into everyday life, I made observations on the farming culture in each town. I spent time in the market, observing prices and the availability of fruits and vegetables. Due to the lack of fruits and vegetables in many government owned markets, the streets are filled with farmers selling from carts. I was able to observe the availability and prices of produce in those carts as well.

For the second part of my study, I lived with a family relying on agriculture to survive; therefore, my knowledge increased exponentially through the observations and interviews of this farm and the neighboring farms.

Defining a farm:

The United States Department of Agriculture: Economic Research Service defines a farm as “any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the year.”⁶ This is the standard for a farm in the United States; however, the translation of this into Cuba’s farm system is near impossible. Merriam- Webster defines a farm as “a tract of land devoted to agricultural purposes.”⁷ For the purpose of this study, a tract of land is considered a farm according to the Merriam-Webster definition.

Cuba Farms:

Through my stay in Cuba, I visited a total of fourteen farms. Many of these farms differed greatly in size, income, and other factors. Of the ones visited, there were family farms, government owned farms, and church owned farms. Although all were different, they each matched the Merriam-Webster broad definition of a farm; however, plots of land in Cuba may be considered a farm by the Cuban definition, even if there is nothing planted. Farms are considered such even if there are two pigs on the plot of land, thus not meeting the Merriam-Webster definition of a farm.

⁶ "Glossary." USDA ERS - Glossary. Accessed August 13, 2017. <https://www.ers.usda.gov/topics/farm-economy/farm-household-well-being/glossary/>.

⁷ "Farm." Merriam-Webster. Accessed August 13, 2017. <https://www.merriam-webster.com/dictionary/farm>.

Due to the hardships experienced through the special period, the definition of a farm has shifted dramatically. Through a series of interviews about the history of agriculture in Cuba, this shift suddenly made sense. Once Fidel Castro took over power in the in the 1960s, he began land redistribution. Through this land redistribution, people were forced to move from the rural areas to the cities. Castro's regime seized large Haciendas, farms, and destroyed them to disseminate power from the large landholders. Some small landholders were allowed to keep their land and houses, but not many were afforded this luxury. The idea of the redistribution was to seize power from the owners and distribute that power to the actual workers of the farms.

This drastically changed the landscape of farming in Cuba. The government had destroyed the family farms and created government farms for cash crops to be exported. Through this change, many Cubans saw "they lost the love of the land because the government is like the 'mother'. The land has been abandoned because there are no crops now".⁸ The government is now seen as a mother, instead of the earth.

Once the government realized the disaster of a loss of love for the land, they began and still encourage people to move to the countryside to begin farming again. Throughout the later half of the 1900s, during the Castro regime, a law was enacted to increase love for the land.

⁸ In an interview conducted on May 22, 2017. Names are kept anonymous to protect anonymity.

During this period, students wishing to enter high school had very few choices. Some were allowed to enter the military, quit schooling, or continue into high school that included hard work on farms. The students in high school were required to board a bus on Monday and travel to government farms to work for the whole week. All of the students from one area would go to a certain farm far away from the city. On these countryside farms, the students were subjected to horrible living conditions and exhausting amounts of work. Each day, the students had a quota of work to complete before starting school. Many mornings were filled with farm work until lunchtime, followed by a shower and then school.

The students living in Matanzas would work eleven days in the countryside, followed by two and a half days at home to rest. Students traveling from Matanzas boarded trains, buses, etc, for a total of ten hours to the countryside. Not only was this work hard for the students, but it also created a strong sense of disconnection from farming. The law was enacted to increase the love of the land, but instead created a generation of Cubans with a hatred for the land.

ANAP: National Association of Small Farmers

ANAP is the organization all family farmers are a member of, a cooperative. This association was created to allow family farms to sell produce legally. Farmers who are members of this have a government permit to sell fruits and vegetables to the government and on the streets. This ensures less fruits and vegetables are sold on the black market.

This co-op helps to provide a community for the farmers. This cooperative allows for the farmers to meet to spread knowledge about farming in the community. When a farmer discovers a new method, it is much easier to share this when there is a cooperative in place; however, the government controls this cooperative, providing parameters for the selling of produce. With government control of sales, subsidies are placed on the produce. The government is able to pay the farmer more, yet, theoretically, sell the produce for less in the market, thus incentivizing farmers to sell to the government for the markets. Due to a lack of supply in many markets, people are forced to buy produce on the streets from farmers, where it is more expensive, due to a lack of the government subsidy.

People not in the cooperative lack the permit to sell produce in Cuba; therefore, many of these farmers without a permit sell on the black market. These people face trouble if caught by the government. If an organization, like a church, has a farm, they are required to have a permit as well. Permits for non-family farms are much harder to obtain, thus there are very few non-family or non-government farms.

Adaptability:

Animals:

Due to the unique situation of Cuba, the farmers have naturally adapted to the agricultural climate in which they live. One of the most striking elements of farming is the use of things on the farm. In the United States, we think of a farm as a plot of land with fruits and vegetables; however, in Cuba, this is not a farm that can

be sustained. Fruits and vegetables bring little money when sold; therefore, many people will buy their fruits and vegetables and focus on one crop like pineapple or grow animals.

Pineapple brings more money because it is taken to Havana, the capital, and sold to tourists, or exported to other countries. Instead of the traditional cash crops of sugar and tobacco, family farms are forced to focus on other income. The government grows the sugar cane and tobacco, instead of family farms. Tobacco farming has become a staple of the Cuban landscape. The Cuban cigar is famous around the world for its excellence. During my research, I was able to visit one of these farms and tour the tobacco house. Throughout my time in Quatroesquinas, I became familiar with many tobacco farm workers who spoke about their love for the tobacco and what the tobacco has created for the country as a whole: a lifeline and something to be proud of.

A farm I lived on was once a sugar cane farm; however, with the fall of the Soviet Union, the farm was required to make a transformation. No longer could the family grow sugar cane without the chemicals that were so readily available before the fall of the USSR, so they turned to pineapple. They were forced to find another way to sustain their family, and many families turned to animals and other fruits and vegetables.

Due to the lack of money in crops, many people focus on animals to bring more money. The government grows many of these animals to sell to the farmers. The animals born on the government farms are considered a higher quality animal.

Even if an animal is not bought from a government farm, all animals in Cuba are required to be registered to the government and branded. This allows the government to keep track of all of the animals in the country. These farms are often inspected to examine the treatment of the animals, and to investigate a sudden death of an animal to rule out foul play.

The pig is a common animal farmers own. This is because a pig will eat the leftovers from the kitchen, has a high feed to meat ratio, and can be sold to the government and eaten by the family. A few farms I visited had only pigs on their farm. These pigs provide the only income for many families. One family had 19 pigs and 30 chickens to sustain the family. Pigs are often chosen because of their dual purpose of family consumption and marketability.

Another lucrative animal is the cow. Since Castro's regime, it has been illegal to eat cows in Cuba. "People can go to jail for fourteen years if they are caught with a dead cow, yet if you kill a person, you may only spend ten years in prison"⁹; however, people still own the cows. Much like pigs, cows have more than one purpose. Cuba has a shortage of milk; therefore, farmers are paid a high price for cow's milk by the government. Many families rely solely on cow's milk to sustain their family. Cows can also be raised from a calf to an adult and then be sold to the government. Although the normal citizens of Cuba are not allowed to eat cow, the tourists and higher government officials have this luxury; therefore, a cow that is raised to maturity will bring a substantial amount of money for the farmer. Even

⁹ In an interview conducted on June 30, 2017. Names are kept anonymous to protect anonymity.

though there are many cattle farmers, people born after the revolution have never tasted beef.

The last two animals commonly found on farms are chickens and goats. Much like in the United States, the chicken is an animal that will eat anything in the yard and requires very little upkeep; therefore, there are many chickens roaming the streets in Cuba. These chickens have a dual purpose as well: eggs and meat. The goat is also a very common animal. They are used for meat and milk to drink, sell, and make cheese. Much like the pig and chicken, the goat browse practically anything in the fields. Many farmers use goats to clean up pastures and other land.

These animals demonstrate adaptability in the farming landscape. With the fall of the Soviet Union, the agricultural necessities for cash crops could no longer be found for family farmers. This caused a shift in the economy of farmers to animals and other fruits and vegetables to sustain their family.

Technology:

An obvious lack of technology comes in the way of chemicals. During the “special period”, farms had access to all of the chemicals they needed thanks to the Soviet Union; however, after the fall, the farmers had to learn how to grow crops without the help from these chemicals. Not only were the family farms left without the chemicals, but the government was too. It required a whole shift in the food system of Cuba. Without the chemicals to grow cash crops, the country could no longer export these crops and import their needs for the food supply.

To this day, there are very few chemicals used in the agriculture of Cuba. In some areas, the government has enough money to buy the chemicals, but in most areas, this form of farming is still too expensive even for the government. In more affluent areas of the island, the government has access to these chemicals, but the family farmers do not. Through my research, I only found two family farms with access to chemicals. The farmers were related, so they were able to pool their money together to buy some chemicals. Of the eight chemicals they used, only two were organic. The chemicals used were ENERPLANT, Previcur Energy 84 SL, Movento at OD, Domark 100CE, BI-MIDA 30 SC, Yaba M, TITAN CE 20, and Nitrogen. ENERPLANT is registered as 100% organic, and the Nitrogen is a chemical element found in the soil. The farmers were told that all of the chemicals being used were organic, or not harmful, by the government; however, after research, I found that, besides the two named, the rest are not legal in many other countries because of their toxicity.

Besides these two isolated farms, there is practically no access to chemicals. The farmers dream about how much growth hormones could transform their small family farms. Although there is little Internet access, the farmers know that their yield could be much higher if they had the technology. Some of the farmers want chemicals used in industrial farming in the United States, but many just want to know what nutrients the soil needs.

Without proper soil testing, farmers have to guess the needs of the soil. One of these adaptations farmers now use is compost. Compost has transformed the soil

in many areas that were once used for cash crops. The cash crops depleted much of the farmland in Cuba, leaving the farmers with infertile soil to sustain themselves. Through the cooperative and the dissemination of knowledge through the communities, farmers realize that compost can rebuild their soil; however, most farms find their compost needs outweigh the family production.

Another necessary adaptation is the use of water. Many farms have wells that provide water for the family, yet they lack the tools for proper irrigation. Farmers use cheap plastic and rubber to irrigate the fields. On more than one occasion, I saw these cheap pipes melted from the heat of the sun. One of the greatest adaptations in irrigation is using simple gravity to transport water throughout farms. Through trial and error, many farmers have dug trenches that best suit his or her land and need of water. If this tactic is not used, many farmers rely on rainfall as the main source of irrigation, void of human interference.

Obligation:

Another way communities were created is through obligation to the government and the people. Through my interviews, people kept commenting on the intense obligation many feel to the government. With land redistribution, people with knowledge of farming were moved to the cities and required to work there. Since the recent movement to entice people to move to rural areas again, the government is leasing land to the people. The people are gifted land by the government to sustain their family, thus creating the burdensome obligation. The movement is about a loss of love for the land but also a lack of cultivation of the

land. It is estimated that about 80% of the land could be cultivated, yet only about one-third of the land is in use. Prior to the redistribution, a much larger quantity of this land was in production.

In the small city of Carlos Rojas, and many other cities across the country, there are many lands perfect for cultivation that are uncultivated. The government owns all of these lands but is not able to take care of it all; therefore, they are enticing people to move to rural areas and lease this land for a small price. In return, the farmers are asked to sell all of the produce to the government. With the government providing the land, the people feel an obligation to produce the most they can from this land. It has provided many people a way to support their family. In these small cities, the cooperative helps to bring the farmers together to find the best practices, yet the main motivator for many is the obligation of owning land perfect for cultivation.

Throughout the special period and after, the country became very reliant on the government and its people. In my research, I found a sense of camaraderie amongst the people. There is a sense of an obligation to help a neighbor and friend out in every way possible, because they have endured such a tumultuous past. This obligation further strengthens the ecological management techniques used to provide money and food for the country.

Biases and Limitations:

One of my obvious biases is my belief that ecological management techniques are better for agriculture. I found that many people in Cuba freely shared that they

are proud of the good quality produce in their country; however, many others realized how much potential the land could have if chemicals were used. This conflict surfaced many times in all of my interviews. People were proud of their unique system, yet they hoped to provide more for their family and country. I counteracted this bias by simply being in the country. I was able to see just how much, even organic, chemicals could help elevate the produce by the country.

Of course, my obvious bias was my upbringing in a democratic society. Although politics were not studied, politics infiltrated every interview and conversation I had while in Cuba. Being in the country allowed me to see the shortfalls of both a democratic and socialist country.

My Spanish deficiency became apparent the minute I stepped onto my first farm. Although I have taken many Spanish classes, I was not able to practice a lot before going to the country. My first week was very difficult to connect with people and interview them because of this barrier; however, people were very patient and helpful with my lack of Spanish. By my second week, my Spanish had improved exponentially, allowing me to further my interviews and conversations and truly get to know the farmers and the land.

My last restriction was the lack of transportation in the country. I was only able to stay in the Matanzas province because of this. The buses throughout the country are not reliable. I was not allowed to use a cross-country bus due to the safety concerns of my contact in Matanzas. Any transportation I used was public or contracted by private car. This limited me from visiting other provinces, but I

believe it allowed me to focus on the Matanzas province and truly get to know the province as a whole, instead of just one place within the province.

Conclusions:

This study examines how ecological management techniques affect the culture within the Matanzas Province of Cuba. This study was qualitative, thus it required strong personal relationships with the people interviewed. Each person interviewed, I spent time with before the interview cultivating a relationship. Many of the questions asked were in relation to the socialist regime, thus the people were hesitant to convey their opinions without a prior relationship.

As noted previously, the communities were created through the cooperative, adaptability, and obligation. Each of these sectors plays upon a different area within a family farm. The cooperative may be seen as the support for the later. It provides a platform for farmers, who may not know each other, to come together and share farming techniques. It also allows farmers across the provinces to communicate more easily. Although it is a government structure, it spreads much further than the original purpose: to have a permit to sell produce legally. The people have used the framework of the cooperative and created a much more sustainable network of farmers throughout the country.

With this cooperative, there are many farms that become “model” farms for the area. These farms are often helped by the government or an outside organization to be the most sustainable they can be, thus providing a framework for other farmers in the area.

From the cooperative comes adaptability. Without adaptability, the farmers would not gain anything from the cooperative. Instead, they would be gaining knowledge without putting it to use. Cuba's past shows just how adaptable the farming system must be to survive. The farmers have experienced serious change in the past century, and continue to experience this change today. The adaptability of the farmers allows them to make changes and better their economy and environment at the same time.

Once the cooperative is created and adaptability is in use, the farmers then seem to find a sense of obligation. This obligation is not only to the government, but to the people as well. There is a sense of obligation to disseminate the knowledge in order for other farms to adapt to the best ecological management techniques and have the highest and best yields. This obligation is directly to the people of the country through the food produced: for people to eat and to make a living. Beyond the obligation to the people is the obligation to the government, because the government helps in picking up the farmers when they fail. It provides checks and balances, not always seen as "fair", to the citizens. Although the farmers can never get rich because the government regulates incomes, many are able to provide the bare minimum for their family through the help of the government.

Future:

The future of the ecological management techniques is dependent on many things that may interrupt the culture that has been cultivated through many years. An obvious threat to this is the involvement of other countries that have previously

followed a hands off approach to Cuba. It is important for these countries to realize the effect they may have on the farming system as a whole if chemicals and other technologies are brought to Cuba. Although there is no way to know the effects of this rise in tourism and involvement, the people of Cuba will be forced to adapt once again.

Another potential threat to the communities is the lack of love for the land. As in many countries, the younger generation loves technology. Technology has become one of the enemies of rural life. Families who have been entrenched in farming no longer have offspring to begin farming the land. These young people want to move to cities and get a job there. The jobs are appealing because they don't require the intense manual labor and many times pay much more than the average farmer. Many of the farms I visited had parents with uncertainties for the future of the family land that has sustained their family for so long.

This want for an urban life is magnified in Cuba due to the Internet phenomenon. Until a few years ago, the citizens did not have access to the Internet. Throughout the past few years, this access has grown but is still limited. The large city centers are the only places with Wi-Fi, and Internet connection in the home is completely impossible. In the city center, Internet is two dollars an hour, which can be extremely expensive for some Cubans. By living in the city, the young people are always close to the city center and Internet. In the rural areas, many of the people have never used Internet and have no desire to.

The next ten years will be important for the movement from rural areas to cities. In order to keep young people in the rural areas, the need for technological amenities is rising, and I believe it will continue to rise. Besides the rise of technology in urban areas, the young people do not love the land and do not want to do manual labor: a problem facing many countries around the world.

The last major thing that may threaten these communities is climate change. One would think, due to a lack of widespread Internet access, that people are uneducated on this topic; however, it is quite the contrary. The government has and continues to disseminate the knowledge about climate change. Even in the last few years, the people have begun discussing what this means for their country.

Many are worried about the higher temperatures their country will face. In the summer, the temperatures many times surpass one hundred degrees Fahrenheit. This intense heat makes it near impossible for farmers to work the entire day. Many wake up before dawn and work until lunch and then have to eat and take time off before going back in the fields around four o'clock. The heat is unbearable and quite dangerous. The farmers will be the ones most heavily affected by the rise in temperature due to climate change.

Another problem is sea-level rise. The country is located in the Caribbean and is surrounded by water on all sides; therefore, any small rise in sea-levels could decimate a huge percentage of the livable land. Along with sea-level rise is the lack of rain because of climate change. During the summer months, it is almost impossible to grow crops now because of the heat and lack of rain. Many people are

worried that any less rain could be the end of the summer growing season. The areas on the coast have more rain and water, but the center of the island faces this problem more than any other part of the island.

Although the problem of climate change is out of their reach, many people do not see it as an end to the island. People see it as another way to adapt, something they have become very familiar with. This is where people believe that their ecological management techniques will continue to benefit the country. Due to the effects of climate change in the near future, many people believe an agricultural system not based on chemicals is the future. Many people see Cuba as a model for this possible way of life: one that is sustainable for all people; the citizens harbor pride for the possibility of this future: “We are building something but we don’t know what the end will be”.¹⁰

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¹⁰ In an interview conducted on May 22, 2017. Names are kept anonymous to protect anonymity.

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