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THE LOVE CANAL:

A SOCIOLOGIST'S PERSPECTIVE

Adeline Levine

with

David Barker

Susan Hufsmith

Martha Cornwell

Penelope Ploughman

Sharon Rowe

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Five graduate students and I have been conducting a participant-observer interview study for the last six months at the Love Canal in Niagara Falls, New York. The Love Canal, the famous leaking chemical waste dump site, is located about fifteen miles from my workplace. The first time that I told an environmental studies funding agency that I was interested in studying the Love Canal, I was asked why is a sociologist interested in this physical, technological matter. One of my purposes today is to address that question.

First, I will talk to you about the history, the current setting and the current issues. In 1890, William T. Love, a city planner, started to build a seven-mile canal to connect the upper and the lower Niagara River in order to provide hydroelectric power to attract industry to a model city he planned to build. The venture failed after four hundred feet of the canal had been dug at the eastern edge of what is now Niagara Falls, New York. The Love Canal would have remained a quaint footnote of interest to community historians except for what happened afterwards. From 1942 to 1952, the Hooker Chemicals and Plastics Corporation, a subsidiary of Occidental Petroleum Corporation, used the abandoned canal as a dump site for toxic chemical waste materials. Once the canal was filled with barrels, it was all covered over with clay and the top area was covered with dirt and was planted so that it looked like a large field, not like an open canal.

In 1953, or thereabouts, the Niagara Falls School Board acquired the sixteen-acre Love Canal site for one dollar with a deed containing the Hooker Company's disclaimer for any further responsibility for the buried chemicals. The 99th Street Elementary School was then constructed on the site, right on the canal. The engineers at the time told them that there were toxic chemicals in the ground that would erode the foundations of the school,

so it was placed on a slab. Homes were also built around this rectangular area to accommodate the needs of the mid-1950's baby boom. The purchasers of these homes were not, to our knowledge, told about buried chemicals, but rather that there would be a large municipal park in the area.

From the earliest days there were signs of leaking chemicals. Individual complaints, however, were infrequent and largely ignored. In 1976, a couple of things happened. Among other things, heavy precipitation in the mid-1970's had caused the canal's underground water level to rise under the clay cap. The residents of the area began to complain to politicians at all levels that barrels, chemicals and open holes were appearing on the surface of the canal and there were other, very visible, very distressing signs of the chemical presence.

In the spring of 1978, the New York State Department of Health began to study the effects of the chemicals on the health of the nearby residents. A citizens' group began to form at this time. There were articles being written in the paper with increasing frequency. By August 1st, the Love Canal story was front page news in the New York Times. On August 2nd, the New York State Health Department called a meeting of the residents and advised them that pregnant women and children under two living adjacent to the canal site should move. The citizens' response was one of simple outrage.

Within a week the Governor of the State had put into motion several lines of action which continue to the present time, basically to learn what had happened, to try to protect people and remedy what had already happened. The agencies of the government and the Governor notified the people that all those living adjacent to the canal and all those across the street, that is those in the inner rings or rings one and two, would receive State financial support to move to temporary quarters, to pay for those quarters and to move to

new homes. The State would purchase their homes. This last decision, to purchase homes, was an unprecedented one in the history of disasters in this country. It has been the cause of unending controversies to the present time.

Various other investigations were started to assess the amount and kinds of dumping that had taken place and the responsibility. There was an investigation of the extent of the damage to the ground and the damage to the health of the area residents. Also, a large scale construction project was started to try to drain the canal and put a new cover over the whole thing. The 99th Street School was shut down and became the headquarters for the supervision of all these activities by the State and for the newly formed citizens' organization.

I will now discuss only the health damage investigation, the State Task Force and the citizens' organization. The ongoing health investigation is being conducted with lengthy questionnaires on the part of the State and with testing of blood samples, air, soil and water. The major citizens' group, with the help of a volunteer scientist and with the cooperation of worried residents, has been conducting a health investigation as well. The most recent development was the February 9, 1979 decision by the Health Department that families living outside the original area, that is those in the outer rings where homes weren't purchased, should move to temporary quarters if there are pregnant women or children under two in the families. The State of New York will pay for the temporary relocation of these families until the youngest child is age two. Thus, they have enlarged the area of people whose homes they will pay for in one way or another to include the outer rings. Parenthetically, you can imagine the responses of the people whose children were under age two in August but who are now over

two. The citizens' groups are still pressing the State to purchase more homes and to remove people who feel they are in danger. The entire situation is still very much in process.

It is obvious that there is much more in this situation than technical issues of the safe disposal of toxic wastes, clearing up a leaking dump site or assessing physical health problems. The effect on the families has been profound, but not all families have been affected in the same way. We have interviewed fifty-eight couples who responded very cooperatively to open-ended questions. These families included people at different stages in their life cycle and people living in the inner rings who had moved, those who were planning to move and people living in the outer rings who had not moved. There are other variables, but I will stick to these for this discussion. We essentially wanted to know what problems faced families living in the middle of an unfolding disaster, a disaster which in one sense is a matter of definition and cognitive awareness. How do families cope with this disaster? First of all, when there is no moment of impact, how do you know you've been hit? In this case, this is a difficult issue theoretically and a troubling one in fact in reality for the people involved, for it creates uncertainty about what exactly has happened, when it happened, how extensive the damage is to life and to property. One man told me, "I've been in a fire, I've been in a flood, I've stood on the bank with my wife and holding two babies and watched all our household goods go by, and I'll tell you this is worse because you live with this twenty-four hours a day and you still don't know."

Sociologists have studied the stages of disasters -- the early warning period, the pre-impact, the post-impact period when people start to recover from the flood, the fire, the hurricane or other natural

IMPACT

disaster which has overturned their lives. Here the impact has not occurred at a clearly-measured point in time but we could think of a long continuum between the moment that the first barrel of chemicals was placed in the canal and some time in the future when everyone comes to believe for certain what the consequences have been and will be. We are currently interviewing people, then, who are somewhere in the midst of the "impact" but it is a cognitive rather than a physical one. It is physical as well, but the cognitive is extremely important. The concept of dawning awareness seems more useful and appropriate in this case than impact.

Over two hundred identified chemicals were placed in the ground in abundance and they have been slowly leaching for a number of years. During this long period of time people have moved from complete ignorance that there were chemicals nearby, step one; to second -- knowing about the chemicals; to three -- realizing that they are dangerous; and four -- to accepting that the chemicals could be dangerous to them personally, that they could actually hurt them. This process has been slow, affecting very few people at first but picking up speed as the event itself began to be publicly defined as a danger. Other factors seem to be related to the variable rates of movement from ignorance to emotional recognition. Some people did not live in places where anything seemed to be happening. Many who did notice that something was happening as long as twenty and more years ago, noticed burns on their children's feet, for instance, when the children played on the canal, strange odors, skin irritations on the bellies of pets, they simply did not think of the possible danger of chemicals being there. When the thought did cross some people's minds, they felt assured because no one in authority told them there were any

problems and some authorities directly assured them that they were incorrect about their worries. When they bought their homes they had been told there was to be a public park built in the area. Several said they felt sure that the area was safe because there was, after all, a school on the property and no one would decide to build a school on unsafe ground. Many had V.A. or F.H.A. mortgages or even plain bank mortgages where the bank inspects a property before giving a mortgage. This was reassuring to them. In some cases, it may be that working class people are accustomed to living and working with some degree of hazard all the time. Many of these men, in addition, work in the chemical industry. Some degree of odor, some chemical burns, some skin irritations didn't seem to be of great importance to many for a long time.

AGE

As we examine our data, we are also impressed with the importance of the age of the respondents, the age indicating their place in their own life cycle, as a variable associated with differences in the emotional acceptance of the idea that there are chemicals nearby, that they are dangerous to people, that they are related to these people and decisions about what to do even if there is acceptance of this entire idea. The oldest age groups, the people above 65, seem much more often than anyone else to say that there is nothing wrong. They have lived in the area for many years, they are living proof that there is no danger. Moreover, in their view, if there is any danger from the chemicals, there is nothing that can be done anyway. Older people from the inner rings have mostly moved now, even if reluctantly. Those in the outer rings that we have talked to feel that talking about the problem and continuing to publicize it does no good and will continue to cause property values to decline further. Many blame the messenger -- it is the

mass media's fault, the Health Department's fault, even the citizens' organization's fault. There is nothing, in short, for them to gain by admitting that there is something seriously wrong.

The youngest people we interviewed, the people in their twenties and early thirties, most of them the parents of young families, are very concerned about the situation and most eager to remove themselves and especially their children from the dangerous areas. They are very concerned about financial problems, concerned with their biggest investment -- their homes. Those who lived in the inner rings, who have moved or who can move, continue to worry now about the effect on their own and their children's health. Families with young parents and those with young children outside the inner rings are working very determinedly to pressure the State to get publicity to try to get themselves out of their homes. Imagine the dilemma of a young couple with two children, say ages three and seven, where one spouse says "Let's move because the children are never going to be this age again. Every day that we're here may be damaging to them." And the other spouse recognizes this but says, "But if we move the only people we can sell our house to will be the speculators. We will be thousands of dollars in debt. How will we ever repay it? We will face financial ruin."

The families who are in the middle, those who are the parents of late adolescents or young adults, the mid-forties to mid-sixties group, have just reached the point in their life where they thought they could relax a little and have enough means to enjoy the next stage. For those who had to move from the inner ring, there is a great sense of weariness, a desire not to have to start over again in a new home. Those who live in the outer rings often say, that if they could just feel that their homes

are safe, so that they could live in them with no fear and would know that they would have the financial security that they had anticipated by someday being able to sell their homes. They would be satisfied to stay.

In short then, perceptions are determined by the perspective from which a phenomenon is viewed. This is obvious. The differing perspectives introduce communication problems because not all the residents comprehend that the differing perspectives result in different perceptions. So that they differ amongst themselves in a psychological and a social sense. Any attempts to work with solutions with people in such circumstances must take into account the diverse perspectives. There is no one perspective, there is no one best solution. The policy makers know that, but they need to keep taking that into account.

There are other effects on families. There is financial loss connected with this event. Just about every person said they had suffered some losses. We attempted to find the depth of feeling about home -- the meaning of home. There is a tremendous sense of loss about home -- whether it is the loss of a home people lived in if they are from the inner ring, or the loss of the feeling about the home they still live in if they are from the outer ring. We realize that there is no sense of financial loss separate from psychological loss of home. There are feelings of worry and anger and fear concerning the loss of money connected with property but in addition much more than that. The people had put a good deal of themselves into their homes. The men in particular spoke of how they had held extra jobs to get the down payment or monthly payments for the home. Many of them spoke of projects in which they had improved their homes. They truly

seemed to have a sense of having translated their sweat, their energy, their time, into these homes. In the words of one man, "You work for a home. Now in a few years when you go to retire, you've got a dead box. I was going to paint up and make a garage and fix it up. Now I'm not going to put money into a dead box and I miss that." Some who have to stay, who have no buyers, no prospects, now feel trapped in these dead boxes. They cannot retire, they cannot leave, they feel like prisoners.

Many of the people we interviewed seemed to be in a period of mourning during the time we were interviewing them. There were many expressions about the loss of home as the center of family life. The home almost ^{as} of the heart of the family. There was some idealizing of the lost object -- of the home -- more beloved now, perhaps, now that it was gone than it had been before. "I keep thinking I'm going to go back, that I'll wake up in my own little home," was what one young mother told me. Another said, "My little house looked so innocent, I cannot believe it has been hurting me all along."

That theme of uncertainty expressed in that last statement was expressed in many ways by many of our respondents. As they reflect on their lives they know that they have had sicknesses in their family but they wonder how much of it has been related to the chemicals that they have been exposed to. As they look forward they wonder, and it's a big question mark in our heads they say, whether they will have more illnesses, whether their children will be prey to chemically-caused illnesses, whether there will be effects in the generations after that. Those who are moving express the fear of uncertainty that they may be moving close to another dump site and there is a good deal of uncertainty expressed about the financial future.

There is a good deal of social impact. There is a disruption of community, of physical setting, loss of friends, loss of acquaintances, loss of even unknown people with familiar faces in accustomed places at accustomed times. There is a disruption of daily routine, a disruption in the use of time. Some of this may be temporary. We are going to inquire on our next wave from the parents what they think has happened to their school age children who have been moved from one school to another as well as what has happened to the other children.

This deep disruption of family life and of neighborhood was unchosen, unasked for, unwanted. People repeatedly expressed the idea of the loss of control over major aspects of their lives. Their present loss of control they now realize stems from long ago decisions to bury chemicals and then to build homes near that spot, not from any decision they made. And now control rests in large measure in the decisions of distant political figures. This sense of loss of control affects their relationships within the family -- where the men speak of their feelings of helplessness, of not being able to protect their families and where both men and women speak of their helplessness about their children's health and futures. On the other hand, there is a new awareness of control in general. Awareness because there has been a loss something they had not thought of before, and there are many people who state that they now intend to be sure to vote, people who have assessed the performance of politicians in great detail -- they know which ones helped them, which ones were indifferent and which ones ignored them and they plan to try to vote and to work in some political fashion.

There are other changes in role relationships. There is

disruption of the relationships with extended families and friends and other people in general. We had anticipated that there would be support networks of families and friends, particularly because many of the residents in this area were born in the area or nearby and had lived in the same houses for many years. However, while many people felt that there had been help and concern forthcoming from family and friends, many, many people spoke of their bitterness and disappointment in this regard. Some were bitter because family and friends did not offer help. Some were actually turned down when they asked for help. Many were told that they certainly were making a fuss over nothing, or they were accused that they were seeking publicity for its own sake, or that they were making a bundle of money when the State bought their homes. Some people have found that they have been stigmatized. Some have friends and families who were afraid to visit the area, which the residents could understand even if it hurts their feelings. But beyond that, they spoke in many instances of people saying they were afraid to be near them, as people, because they might be contaminated in some communicable way. One example a woman gave us, a woman who liked to go to a downtown bar and have a drink occasionally, and she said now when she goes in, whatever end of the bar she's standing at, everybody goes and stands at the other end.

The emphasis in Sociology and Psychology about the efficacy of personal networks as sources of assistance in times of need should be examined skeptically with reference to such an overwhelming emergency in light of the fact that, as one woman told us, "strangers become your best friends, that's what I've learned." This then

leads us to secondary agencies organized to help in this time of emergency. I will discuss only the major citizens' organization and the major publicly funded helping agency, the Interagency Task Force. This agency was established by the State of New York when the State began the task of investigating the extent of the damage to the residents' health, purchasing homes, helping to support people who moved and overseeing the remedial construction work on the canal. The Interagency Task Force is composed of people from ten different agencies and is structured so that there is one Task Force level in Albany, relating to the Governor and government and a working level in Niagara Falls, on the spot.

The chief citizens' organization, the Love Canal Homeowners Association, has its headquarters in the same location as the New York State Task Force. The relationships between the two organizations are complex. At heart, it seems more adversarial than cooperative. Theoretically this is interesting, because one can postulate that given the very obvious needs of the people, given a large, well-funded governmental agency created to address those needs, the collective goals would lead to harmonious, cooperative working through of problems. However, the disaster literature had informed us that one of the chief problems felt by victims of natural disasters is dealing with all of the helping agencies afterwards, including governmental agencies. So we anticipated that the narrow constraints of the agencies, their limited resources and the day-by-day grind of working with distraught people would lead to some coolness in relationships and these expectations were brought out. The people pressuring to have their homes bought see the State as the only agency which has shown that it has the interest or the

requisite funding to provide massive help right away. The State people often express the idea that the State has already done so much, having spent or committed millions of dollars, that the people 'are just insatiable.' The people see the State or the government as unreasonably withholding help that they should have. They are good citizens, a proud community, they pay their bills and their taxes and have served in the military service. "Why," they ask, "shouldn't we be taken care of now?"

One of the difficulties here is that there are no legal statutes to cover precisely this type of a situation (abandoned waste sites and their victims), statutes which would allow the setting up of a flexible approach to the problem. The State personnel treat protesting citizens formally, but from the perspective of the people, the formal treatment feels cold, impersonal and paternalistic. The citizens, in their attempts to keep the attention of the mass media, which has been a primary source in their fight with the State, have demonstrated or used other attention-getting devices. The citizens underestimate the hurt felt personally by State people from comments and criticisms made publicly by citizens. After all, the personnel view themselves as humane people, they don't view themselves as villains. The State underestimates, on the other hand, the hurt felt by the citizens when they propose lines of inquiry and are rejected because they are, after all, uneducated housewives.

The State, with all its resources, is facing massive problems. Handling even a part of the situation reveals the problems of planning and coordination and lack of resources to respond to this type of overwhelming emergency. Just as individuals moved through the

process of dawning awareness, the awareness of danger, so the State (and the Federal government) now moves through a process of dawning awareness of the lack of resources and tools to meet this new, overwhelming emergency in our society. The State is also faced with the problem of setting precedents for a never-ending purchase of homes, for there are many, many such dump sites in the Niagara Falls area alone, and according to the Environmental Protection Agency, a vast number elsewhere in the nation.

The major citizens' organization has followed classic social movement lines from the individual perception of a problem to a fairly well organized group of people to achieve a goal. The organization is lead by housewives who indeed are twelfth grade educated, a remarkable group of people. The leadership has coped continually with the questions of legitimacy without and within; of maintaining leadership; and of handling the dissidents, trying to capture their creativeness while not allowing dissent to tear the organization apart. Membership in the organization costs one dollar. They are not, to say the least, very well financed. They depend upon volunteers to do a variety of tasks, and the volunteers have a variety of ideas of how to do things. The State lends them some support by giving them a room and telephones. The State needs them for the State people need to know that they will neither have to take care of each and every mundane detail, nor have to deal with angry, unorganized people. There are continual struggles for power within the organization. The setting of interim goals and methods of reaching them are matters of constant negotiation. Both within the citizens' organization and between the State and this major organization, there is a day-by-day accommodation going on, a process which the student studying it has called adversarial dialectic -- an

on-going process where new solutions develop out of a relationship with many adversarial elements in it.

What is at the base of the adversarial relationship? One question is the proper role of the State and the legitimate area in which that role is played. There are no precedents, no legal statutes, no customary procedures for this event. The people's goal and the State's goal may be grossly similar -- to help the affected people -- but beyond that, the interpretation of who is affected and what to do differs sharply, with the residents of the area pushing for expansion of help and the State holding fast for containment as long as possible.

There is a further problem here and that is the problem of communication with mutual trust and respect. The major agencies which have been working with the people in this case are the Department of Health, Social Services Department and the Department of Transportation. Many of the Department of Health personnel are not accustomed to working directly with people; Social Services personnel, who are accustomed to working with people, have generally worked with them as clients in an unequal status situation. If the working together between the citizens and the helping agencies could occur in a climate of mutual respect and trust, I feel this would help to alleviate a lot of problems. For one thing, the contributions that the citizens could make could be very important. They know what they, themselves, need in the way of rehabilitating themselves and most of them are reasonable people. In any situation where a great deal of money is spent, there will always be a few people who try to go beyond the norm, but most people are reasonable and they know what they need better than other people do. In this situation almost nobody -- professional, scientist, trained person, untrained person --

knows a good deal about what is happening or what to do. Everybody's ideas may be helpful and everybody's ideas and experiences could contribute to developing the great pool of knowledge which is so essential. These people may well know what to do, their wits have been sharpened as they fight for their survival and their contributions may be of crucial help and importance. In this case alone, two important hypotheses about examining the health data have come from the citizens themselves (swales theory and clustering the birth defect information by years.)

In addition, if people who have lost control over their lives are given back some control. (not a token, make-believe sort of control, "input" grudgingly granted, as advice to the people who are really going to make the decisions, but real control) it would help the people to regain the sense of control over their lives. It could, perhaps, even help them to move forward to become more than they were before all this happened.

We have found that the secondary agencies are important. We cannot depend upon the primary networks in such overwhelming circumstances. We must depend upon the secondary agencies and it is essential, we think, to develop true working relationships. There might be a reduction of dissent between the citizen and State governmental groups, and be a reduction of dissent within the citizens' groups about how to approach the distant, cold, forbidding figures were the communication handled in a manner characterized by mutual trust and respect.

A good test of this hypothesis happens to be another agency which had worked closely with the people, the Department of Transportation. This agency was brought into the case because when new roads are built

this agency deals with people whose homes and properties are going to be taken. DOT people are accustomed to working with people who are not "in trouble," people that they have to respect, people who can turn around and sue them. And they treat the people as equals and work with them. None of respondents has complained about this department.

The final matter I will touch upon today is the problem for scientists working in a highly politicized situation. The State Health Department employs a large staff and they have a half-million dollars allocated by the State Legislature in order to study health effects of exposure to low levels of chemical pollution. The Health Department scientists make recommendations to the Governor concerning their findings. Despite the fact that they have collected information by means of questionnaires and physician and hospital records, the normal controls of science are not operating here. For example, one control that they used was a group of outside experts -- a Blue Ribbon Panel. The Panel has been used from time to time, but the names of these experts have never been made public nor have the evidence for decisions been published. There is lip service given to operating scientifically by exercising great caution by avoiding type one errors (in not moving people unless there is absolute certainty of danger.) This saves money and it avoids disruption, but one could argue that in a case concerning health one tries to avoid the type two error (the people are moved if there is any possibility that their health is in danger.) The scientists are well-trained, intelligent and of high personal integrity, but the normal social controls are conspicuous by their absence. What are some of the normal social controls? The controls of independent replication, independent

criticism, peer review of conclusions, inferences and methods, criticism of the appropriateness and use of decision criteria. We may examine this as Sociologists, looking at the social structure within which research is done, looking at the researchers themselves, their sponsors, their critics, their audience. We can look at the psychological problems, knowing that we talk about the importance of peer review and yet indeed, knowing few of us are thrilled and happy when a manuscript we have submitted returns back from a journal and our peers have rejected it on the basis of its inadequacies and have offered us their constructive criticism. Are we happy about this? We are not. So if people operate in a situation where they do not have to have peer review, it seems apparent that one may be lax about the norms of science.

And there is the question of conflict of interest, in the case where an agency which is collecting the crucial data is also making recommendations to a Governor who appoints the head of that agency, and where recommendations may lead to the expenditure of millions and millions of dollars and involve the health of thousands of people. Furthermore, the problem is aggravated because there actually is such an acute lack of information on the physical, psychological, social and other effects of the long term exposure to toxic chemicals.

You must realize that this entire problem, while not new, has been with us for a relatively short time. The chemical industry took a major spurt forward during and following World War II. It was not until the early 1960's that Silent Spring was written and I date that as a period that people other than chemists began to be aware of the serious dangers of chemicals. We have scarcely had time for all of this to sink into our collective national awareness.

While this whole problem is not unique, it is relatively new. We lack pertinent legislation; we lack the proper enforcement for the legislation we do have. We lack physical data and social science data to deal with the thousands of ticking time bombs, the buried dump sites in our society. We don't know how to help citizens and helping agencies to work together. We don't know how to develop ways to enable scientists to work most proficiently with the normal controls of science. We want the best scientists possible to work in these situations, in these very difficult, highly publicized, highly tedious, highly politicized situations. I would hope that by describing the situations, by indicating what some of the important issues are, by developing and testing theories in this important area, that Sociologists could play a role in one of the most important problems we have today; the human and social impact of our late twentieth century technological problems.