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PARTICIPANT INTERVENTION IN PROVIDING DOMESTIC WATER

by

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Comparative Studies of Cultural Change

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Early in 1964, members of the staff of the Comparative Studies of Cultural Change in the Department of Anthropology at Cornell University initiated research in several small rural settlements on the island of Puerto Rico. These investigators found occasion during the course of their research to test the participant-intervention method of anthropological data collection first employed by Holmberg (1955:23) centered around the anthropologist acting as "designer and activator of a socio-cultural process" while he records events. A specific goal of the first experiment in participant intervention in Vicos, Peru, was to develop "independent problem-solving and decision-making organizations among the indigenous population which could gradually assume the control and direction of community affairs in a rational humane manner" (Holmberg 1955:24). This procedure was tested in Barrio Pasto in the Municipio of Coamo on the south coast of Puerto Rico from March through July of 1964.

The field research staff set out to study La Cuesta and Monteria, two geographically isolated settlements of farmers whose principal crop is pigeon peas (Cajanus)(cajan). They also cultivate oranges, plantains, yautias, batatas, malangas, and other tubers, so this Barrio Pasto portion of Coamo Municipio is a "minor crops" agricultural area, in terms of time-honored Puerto Rican cultural characterization. (Dominguez 1923:617; Ramos & Bourne 1934:13; Steward et al 1956:93-170).

Monteria is located some eight kilometers from the town of Coamo, and La Cuesta lies three kilometers farther away. The unpaved dirt road beyond island Highway 556 rises from 150 meters to about 350 meters above sea level at Monteria, and to 450-500 meters elevation at La Cuesta. The thirty-four houses in La Cuesta are scattered over the south slope of the massive Cordillera Central. These two settlements were chosen for study because of their relative isolation from urban facilities, which was expected to

have cut them off from many Commonwealth and federal development programs carried out during the past three decades. The study employed and relied heavily upon information collected using a 186-question structured schedule administered to the heads of all households in each community who could be interviewed. Data thus systematically collected were supplemented by intensive semi-structured interviews with key informants, and first-hand observations of daily life made by members of the research team during a short period of about a month's residence in each settlement studied.

The fifty-two houses in Monteria are strung out along the road in "shoe-string" fashion. They were served when research began by electricity and supplied with running water provided by a system supervised by a committee of local residents. A school building constructed during Puerto Rico Relief Administration days was staffed by three teachers offering six grades of instruction. A small Parent Teachers Association brought these two groups into occasional interaction. The Community Education Division of the insular Department of Education operated a library. An agricultural extension agent frequently visited Monteria, and the Community Education staff conducted programs there every other week as part of its island-wide program (Islaes Wales 1957:355). A Roman Catholic priest celebrated Mass every Saturday in a private home. Members of the Baptist denomination had erected a church visited by a preacher every Saturday. Private enterprises included one fairly well-stocked grocery store; three bars, two of them providing pool tables; four public inter-settlement jeep taxi-buses; and one large-scale enterprise producing broiling and frying chickens for the urban market.

La Cuesta, smaller and more isolated than its neighboring settlement, was served by electrical lines despite its farmstead pattern of settlement, but lacked piped water, school, church, grocery store, library and any

regular instructional program carried on by visiting outsiders. It had two bars with billiard tables, and its residents visited the outside world aboard two jeep taxi-buses. La Cuesta was established by three coffee plantation owners around the middle of the last century. The descendants of the one-time laborers on the original plantations constitute the present peasant population. After the disastrous hurricane of 1928, all but one plantation owner sold his last remaining land to these small farmers. La Cuesta is now composed exclusively of small farmers and their relatives.

While both La Cuesta and Monteria appear to have been settled little more than a century ago, natives of both have been emigrating rapidly during recent years. Residents of both settlements are genetically related to one another to a considerable degree because of migration from La Cuesta to Monteria, and intermarriage.

Because of its rather direct links to barrio and municipio authorities, Monteria is organized politically in ways that La Cuesta is not. Barrio Pasto is headed in formal terms by an elected president. At the time of this study, the incumbent was a highly successful large-scale commercial farmer, too busy with personal affairs to devote much time to this office. He had, therefore, delegated most of its functions to one of his godsibs, the owner of the single grocery store in Monteria. This individual is "god-father to the neighborhood," because he has more godsibs than anyone else in the barrio. He also provides them with large amounts of credit. His credit to families in La Cuesta and Monteria that need it is interest free. He may carry up to a thousand dollars in unpaid bills during the "dead season" from June to January. Once cutting begins in sugar cane fields in Santa Isabel and the local pigeon pea harvest starts, his debtors pay their bills.

This storekeeper also operates the most regular taxi-bus service between Monteria and Coamo, delivering milk, groceries, insecticides, seeds, fertilizers,

and manufactured goods to any house requesting them. Since the road ended short of La Cuesta when this study began, he off-loaded at the end of the road, hiring an idle youth to make delivery if one happened to be available. This fellow purchases milk in Coamo for delivery to his regular customers. The Board of Education pays him to bus children to and from Coamo schools. His key position receives recognition from bureaucrats and elective officials in the county seat. Thus he often accompanies individuals with problems to government offices in the town of Coamo, and helps them to obtain assistance.

Such informal social structure has provided a foundation for more formal organization which has facilitated definite socio-economic advantages for Monteria. In one instance, piped water was introduced into the community by popular demand after weeks and weeks of discussion in part stimulated by a very able "Educator" from the Community Education Program. Misunderstandings and misconceptions about the possibility of pumping water to the surface electrically and other problems were explained. Once it was decided that water was essential, a coordinating committee was established in Monteria to consult with engineers from the Department of Public Works, the mayor of Coamo municipio (to seek financial assistance), and it was empowered to organize the internal labor force and raise funds in Monteria itself. Monteria now receives a small amount of cash income monthly from the flat rate charge for maintenance of pumping equipment, and this can be used for civic purposes.

The success which Monteria has had in inducing governmental agencies to improve conditions in the community has produced among its residents a strong sense of affiliation with the ideas of former Governor Luis Muñoz Marin and his Partido Popular. People in Monteria feel that they are part of Coamo and Puerto Rico.

The people of La Cuesta, on the other hand, had not been able to organize in the same way when this study began. They tended, therefore, toward political separatism and affiliation with the Statehood Party. Yet the attitude of dependence on government was striking. Isaacs and Wales (1957:352) have already commented upon the "all-too-usual-attitude" of looking to government to do the job in rural communities where the Division of Community Education group organizers work. Since the days of the New Deal, free government services to Puerto Ricans have increasingly ramified, first with gigantic programs of welfare and social security, and secondly with massive public works projects. Welfare, social security, unemployment compensation and various forms of public assistance are in Puerto Rico part and parcel of the federal government's aims to alleviate poverty and misery in depressed areas of the nation. Such programs have gone into effect on the island with the passage of laws that have changed the economic and sometimes the social status of millions of Americans.

Public works projects, on the other hand, do not immediately nor uniformly affect the social or economic condition of the citizenry. Roads, electrification, schools or clinics take years to saturate a depressed area. One depressed area must be improved before another, moreover, simply for fiscal reasons since resources are scarce relative to demand.

La Cuestans do not fully understand this dichotomy. They receive social security and many other federal benefits, but remain almost untouched by roads and other public work projects. In their minds, checks received regularly through the United States mails derive from stateside efficiency and benevolence. Public works projects are viewed, on the other hand, as peculiar to Puerto Rico and local administration. When La Cuestan complains concerning physical isolation have gone unheeded, the response has been disaffection with local and insular government officials and the platform of the ruling Partido Popular.

Opposition to the majority political party has served as a rallying point and isolating mechanism for La Cuestans. When asked by interviewers about their political beliefs, they stressed over and over again that if Puerto Rico were to become the fifty-first state, then every community like La Cuesta would have its highway, school, and clinic, that more jobs would be available, that there would be less poverty. They stressed that it was incumbent upon the government to provide everyone with all the necessities of life.

This general attitude of dependency yet dissatisfaction with the Muñoz Marin administration then drawing to a close demonstrated graphically some of the changes that had occurred in rural Puerto Rico over the last thirty years. The research staff concluded that if attitudes of this sort continued, La Cuesta and communities like it would remain intellectually and psychologically underdeveloped even if their state of physical isolation were ended.

Yet when the people of La Cuesta were asked about their ability to cooperate, most respondents reported that there was a good base for cooperative action. No communal enterprise had ever been brought to fruition, on the other hand, nor had there been so much as a community meeting to discuss La Cuesta's problems since the day of its founding a century ago, so far as the research staff could determine. It seemed therefore, that residents of La Cuesta perhaps held an unrealistic image of themselves, given the existing low level of organizational skill in the population.

The researchers resorted, therefore, to participant intervention in community development, designing an experiment which would probe several puzzling problems presented by the La Cuesta population.

First, participant intervention was used to collect information that would allow a comparison of the ideal behavior recorded in questionnaire

responses with controlled observation of behavior of a significant number of individuals engaged in a community enterprise triggered by the researchers.

Second, participant intervention was utilized to obtain data on the question whether La Cuesta could be articulated with governmental agencies whose function is defined as assisting in rural community development. A subsequent question was whether such articulation would in fact lead to creating a positive atmosphere in relations between the La Cuesta population and the outside world, so that the former group might begin to respond more rationally than merely rejecting the challenges modern Puerto Rican life presents.

Third, participant intervention was employed to shed light on the feasibility of external social-engineering assistance in helping residents of La Cuesta organize to work toward improving their own settlement and making it a more desirable place in which to live and to work.

Fourth, participant intervention was undertaken to determine whether the people of La Cuesta -- and by inference other settlements like it -- could carry out significant community improvements by genuine cooperation among neighbors investing voluntary labor but little or no local money, more quickly and economically than the same improvements could be accomplished by governmental action. These last three goals meant that the researchers became policy scientists by venturing into what Lasswell (1963: 99ff) terms "prototyping."

The structured questions administered by the researchers, as well as direct observation, stimulated La Cuestans individually to discuss some of the community's problems. Two of the most frequent responses to the question "What does this community need most to make it a better place to live?" were that it lacked a paved road and running water. The inhabitants of La Cuesta desired a dependable water supply piped to their houses to end the inconvenience

of carrying water in buckets from streams whose flow fluctuated greatly, and almost disappeared during drought periods. This, and a desire for clear rather than muddy water more than any desire for a pure water supply, is a common motivation reported from many modernizing areas, such as Italian, German and Portuguese colonization projects in Brazil (Oberg 1964: 7-8) northern Ecuador (Erasmus 1961:28) and central Peru (Adams 1959:204).

When the field staff was well into its data collection process in La Cuesta, a few families became interested in the possibilities of a community-wide water system after consultation with one member of the research staff. There were three springs in La Cuesta high above any of the houses of the settlement. The research staff was asked to inspect the springs and make suggestions as to how an inexpensive piped water system might be installed.

The research staff decided that it would be technically feasible to provide the scattered households of La Cuesta with piped spring water. No technical reasons for failure such as have destroyed the utility of numerous community development projects (Kushner, Gibson, Gulick, Honigmann and Nonas 1962:12-13; Dobyms 1951:30; Castillo, Castillo, Revilla and Maynard 1964:71-72) were anticipated.

The research staff decided upon participant intervention in a potable water installation project in terms of certain substantive considerations besides the methodological points already mentioned. It was assumed that small settlements composed of fifty families or less located in hilly or mountainous zones of developing countries cannot feasibly be included in projects to supply larger towns with potable water -- even when several of the latter are grouped into a regional project. The Puerto Rican government has already decided that a certain residual percentage of small, geographically isolated rural settlements may never be affected by some of its public development programs. Government programs for providing other utilities such as

electricity, or services often take precedence over potable water system installation in both planning and execution.

On the other hand, government grants in aid are available in many countries to help such isolated populations improve their own water supplies. In Latin American countries such as Mexico, Bolivia (Junta Interministerial Directiva 1963:60), and Peru (Dobyns 1964:68), assistance for such community development projects may be obtained in the form of small grants in cash or in kind from municipal, state or national authorities, with technical supervision from the national water department or its functional equivalent, typically in the Ministry of Development and Public Works. Rural settlements volunteer sand, gravel, plumbers, carpenters, bricklayers, and unskilled labor, plus in some cases a small share of the monetary cost of manufactured materials such as pipe and cement.

It seems that the success or failure of such projects depends upon the ability of the rural populations concerned to organize themselves into a labor force sufficient to carry out the installation desired, whether on their own initiative or in response to external stimulus (Oberg 1964:5-6).

The participant intervention method of research further assumes that one way in which populations without political structure or social organization adequate for such a task can be rapidly consolidated is to share with individuals the results of research on them (Holmberg 1955:25). In this Puerto Rican participant intervention, results of an analysis of expressed values which prevailed in La Cuesta were communicated to its residents. The research staff deliberately stressed values which might be expected to strengthen a cooperative spirit, in order to find out whether an esprit de corps would emerge, in a population with a history of individualistic endeavours.

After talking informally with some farmers one day during March in the middle of the road to La Cuesta, the research field director encouraged them to speak with all their neighbors about the possibility of holding a community meeting to discuss a water project. It took little effort to bring everyone together, since La Cuestans had by that time all recognized their common problem and needed only a small stimulus of an outsider's invitation to begin attacking it.

During the first community meeting in the history of La Cuesta, the ideals of the population were critically examined. People said that there were good feelings among neighbors, that the community could solve its own problems, that it had the resources to do so, that there was sufficient confidence in one another to carry a program through to its conclusion, and that cooperatively run enterprises could be handled more efficiently than the same job done by the individual alone. Yet self confidence was not universal among those attending: some feared failure.

Members of the little community slowly realized that with the common sense of trust shared by most of them the installation of piped water to a majority of the houses was possible, providing enough of the estimated cost of one thousand dollars could be found to start. Confidence increased. The members of the community pledged \$290 the first night. At the same time, a special water committee -- the first formal problem-oriented settlement-wide social structure to emerge in La Cuesta -- was elected to petition funds from the mayoress in Coamo. The tone of the meeting was optimistic and the conversation animated. Even those who ordinarily were reticent about speaking asked questions about financing, whose spring would be tapped, how labor would be equitably divided, where materials would be stored, who would design and supervise construction of the tank, and so on.

A few days later, the water committee made its appearance at the office of the Popular Party mayoress of the municipio and made its bid. The first lady of the municipio was impressed by the community's efforts to help itself and promised \$300 in materials which had already been earmarked for a water project in Monteria. If Monteria would agree to a temporary delay in starting its own use of these funds until June, La Cuesta could begin at once.

The La Cuesta committee arranged to meet its counterpart in Monteria to discuss the matter. No agreement could be reached until representatives of the Community Education service, the Development Department, the mayoress and the collected citizenry of Monteria could discuss publicly the move.

La Cuestans were temporarily dismayed by Monteria's rational refusal to cooperate. Eyes were turned to the research group with hopes that it would take charge of the now faltering project. Undercurrents of this sort had been present from the beginning. La Cuesta residents tended to view the members of the research team as social workers -- rather eccentric organs of the American or Puerto Rican government. At the same time, one extended family, that of Don E., his son, and his grandson, began preliminary work on the project with the collaboration of two other men, weeding and trenching in anticipation of the water pipes which were to be laid down.

The mayoress, realizing that La Cuesta was in earnest, discovered \$500 in an extraordinary municipal fund that had been saved from an already-completed project. Within a few days, trucks arrived at the end of the road below La Cuesta, bringing the amount of cement, pipes, lumber and other materials calculated to be necessary to construct the water storage tank. A hydraulic engineer was sent to verify the technical feasibility of the project. An agricultural extension agent was also involved in preliminary programming.

With all the materials present and all conditions met, the researchers expected the water committee to draft laborers and terminate the project rapidly, since 1964 was a drought year in Puerto Rico and women in La Cuesta had to search in ever more remote holes for drinkable water. Yet action was extremely slow. Only Don E., his son, and his grandson labored on. No one joined them. At the end of March, E's son left to work in a Brooklyn factory. The research staff terminated its study in La Cuesta and moved on, having written off this project as a failure, since work was proceeding so slowly. Don E. did not complain, but kept on. On subsequent visits to the community during April, the research staff found that Don E. alone continued working on the project.

People in La Cuesta complained that they could not spare time from pigeon pea harvesting or from cane cutting to work on the water installation. They would all join in the task in June, they averred. Don E. became impatient. The research staff was not jubilant in having discovered that what was said and what was done by the people of La Cuesta seemed to lie several poles apart. It seemed that the mayoress had thrown away \$500.

As soon as the pigeon pea harvest and the zaira terminated, however, most of the people who had pledged ten or fifteen dollars paid their contributions to the project, and some young men volunteered to help in the work at hand. By June 10, a massive work force was on hand daily with Don E. as the director. By June 16 there were no more materials. An urgent telephone call was placed to San Juan inviting one member of the research group to preside over a special meeting to be attended by the mayoress and the agricultural extension agent. The purpose of the meeting was to collect more money, and to urge those who had not yet paid their quotas to do so. Already the community had obtained easy credit at a Coamo lumber and supply company. The mayoress had arranged for a bulldozer to extend the existing

dirt road to a point just below the new water storage tank. This meant building nearly two kilometers of roadway which had been abandoned by vehicular traffic for decades. Seventy dollars were collected. The La Cuesta people argued that the research team's field supervisor should preside over the meeting because they themselves had little experience in democratic procedures. They would learn from his example, they said.

With this additional support, the water tank was constructed, and all the pipes were laid. On July 18, the system was formally inaugurated by the mayoress.

La Cuesta's potable running water supply installation project was a success.

The technical victory of La Cuesta was in itself exceptional. The entire installation for twenty-five houses cost less than \$1,100, labor costs excluded. A ten by ten by eight foot reinforced concrete water storage tank was constructed and more than two kilometers of pipe laid. The only outside assistance La Cuesta paid for was a plumber who worked three days for \$46 and the use of the bulldozer for two days.

The evolution of values in La Cuesta as a result of this accomplishment has been remarkable. When research began in the community, La Cuesta was dependent on the government for everything. Because the insular government was not moving fast enough to suit them, the people proclaimed that they were "orphans" of Puerto Rico, and affiliated themselves closely to the Statehood Party in protest against the poverty perceived as created by the Popular Party. Luis Muñoz Marín himself was seen as a good man, but members of his party were viewed as shiftless. Principal among these party members in Coamo was the mayoress. She represented to La Cuesta the immediate power of the Popular Party which did nothing for isolated corners of the municipio such as La Cuesta.

When a conference with the mayoress was suggested at the first La Cuesta meeting, many persons said that she would never help a community of Statehood Party members. Surprise ran rampant through the hamlet when promised materials actually arrived there. When the mayoress herself paid several visits to La Cuesta, its isolationist shell began to crack.

With the second meeting in June, when La Cuesta could see the fruit of its own efforts and when a commercial house in Coamo guaranteed easy no-interest credit, a real transformation in the value system took place.

Now, La Cuestans no longer depend on the government as much as they formerly did, nor do they have the defeatist complex which characterized them at the time the research team administered its questionnaires. With potable water installed and an improved road actually reaching the settlement, land values have gone up in La Cuesta. A request for latrine forms was granted and new privies are being constructed. La Cuesta homes are being repaired. People there now say that they want to stay rather than move to more commodious communities. They appear to have gained new morale by inspiration with the importance of their achievement and mutual approval of their cooperation (Lasswell 1963:108).

Whether this transformation in the value system of La Cuesta is permanent remains to be seen. Don E. has emerged as a dynamic figure in his community. Perhaps he will lead La Cuestans to greater achievements.

Experimental participant intervention thus produced numerous, continuing, practical results, throwing considerable analytical light upon the dynamics of the socio-political integration of social isolates. The inter-personal relation dimension of this process also became clearer to the research team. During the elaboration of the water project, the researchers were able to note that certain hostilities were present in La Cuesta which would otherwise have escaped its attention. The manager of the farm on which the brook

supplying the water to the storage tank was located was rumored to have demanded an elaborate shunting mechanism that would guarantee a steady water supply to his cattle pasturing on the hill. He was characterized by neighbors as a stubborn fellow but a person who little by little could be won over. After cajoling him a while, his friends and relatives convinced him that to demand so much for animals at the cost of community water service and his neighbors' good will would be foolhardy. He withdrew his claim, and later cooperated vigorously in the installation of the tank.

Another instance of friction originated with a housewife who wanted water service first although her house was located at the end of the new pipe. Her husband worked on the installation, and she took his contribution as a basis for a demand that was impossible to fulfill because of the spatial relationship of houses to the water line.

Inter-personal tensions arose between Don E. and some of the teenagers of La Cuesta during the construction phase. These boys were unproductive members of their little sub-society. They did not cut cane or pick many pigeon peas. They wandered aimlessly about the hills doing almost nothing. When piped water was brought to the hill on which the storage tank was to be constructed, these youths proceeded to contrive a rustic lean-to where they used the water to shower. They took advantage of the work of the adults and younger boys, instead of helping Don E. and the others. The old man, angered, hurled invectives at them almost daily. At first they sheepishly scurried away when they were caught. Later, they became bolder and returned a few of their own epithets as they leisurely retired from their bath. Taken aback by these demonstrations of adolescent nonconformance with the La Cuesta cooperative values, Don E. extolled the virtues of times past when youths respected their elders more. Thus the researchers learned

that La Cuesta' own adult standards of behavior have been imperfectly enculturated in the entire adolescent population. Community pressure on these youths during the period of peak effort on the water project brought them at least briefly into conformity with local standards of behavior by putting them to work.

An additional type of conflict arose when people from La Cuesta sought contributions from Monteria in order to defray some of the costs of installation of the potable water supply system. Monterians argued that they were in no way obligated to help in this project, since not a drop of La Cuesta's water would be used in their community. People in the less isolated community had forgotten that many a La Cuestan dollar had been spent on Monteria water project installed some years before without any benefit whatsoever to the remoter hamlet. Thus the researchers learned of this prior La Cuesta common effort with Monteria. Bitter comment was stimulated by Monteria's refusal. Some La Cuestans threatened not to contribute another penny in Monteria's behalf.

These minor blemishes did not detract, however, from the overall picture of community solidarity in the water installation project. La Cuesta, already united by kinship and common traditions, was further cemented together by its first communal project. Values which stressed unity were strengthened, and the observed behavior of the community in this respect definitely correlated with its ideals. For the duration of the water installation project, most members of the population acted as if these cooperative values were indeed internalized. The change in attitude which outside officials observed in La Cuesta encouraged them to collaborate efficiently with the volunteers of La Cuesta in order to expedite their potable running water installation.

Greater articulation with governmental agencies whose purpose it is to help promote self-help projects was effected. Involvement of La Cuesta with the mayoress, and through her suggestions, with engineers and other technicians from the departments of agricultural extension, water and sewage disposal, and public works, sparked new ideas for the settlement to achieve new levels of development as well as social integration. People in La Cuesta are willing to contribute their share of expenses and labor in order to improve their hamlet. One interviewer noted, for example, that after work on the water project was begun in the middle of March, a change in replies to one item on the study questionnaire was apparent. To the question, "Who should be responsible for a project such as repairing a road or constructing a public building?", the reply changed from "the government" prior to the project to "the government and the community jointly" after the project began.

By July of 1964, La Cuestans were no longer Statehood Party supporters, at least not so adamantly as before. After a successful enterprise which involved both Popular Party members and civil servants, people in La Cuesta could no longer stereotype the party in power as all bad. If the mayoress seeks election at some future date she is almost certain to capture most of the votes cast from La Cuesta. This conversion should not be interpreted, however, as permanent nor even transmutable into votes for other Popular Party members from Coamo. The Senator and Representative in the island legislature, for instance, did not involve themselves in the La Cuesta water project. They are not seen in the same light as the mayoress at present. The perception by the people of La Cuesta of individuals in political posts, regardless of their party affiliation, in terms of their bringing progress to the community or not represents a sharpening in sophistication of view toward outside forces.

The feeling of self-confidence of the people of La Cuesta was further strengthened when materials were supplied to them on a long term credit basis by a private building supplies concern. This was community credit. Outsiders were looking at twenty-nine families as a single economically responsible unit. In a talk with the proud citizens on the occasion of the water project's inauguration, members of the research group found that La Cuestans were beginning to feel as if the municipio's eyes were upon them, as indeed they were.

Observing the lesson learned by La Cuesta, other communities of Coamo municipio bombarded the mayoress with self-help project proposals, most of them involving water. These communities could offer only a fraction of the cost of these projects, most or all of the manpower, and the hope that like La Cuesta, they could improve their standard of living and regain a community dignity lost to a large extent during thirty years of dependency upon governmental initiatives to solve the problems posed by rapid modernization and property losses occasioned by repeated severe hurricanes.

In analyzing the course of events that occurred in La Cuesta following participant intervention by the researchers, it seems clear that the critical innovation fostered by the research group was the creation of a water committee elected in open town meeting and charged with specific problem-solving responsibilities. From this innovation in local social structure flowed a whole series of consequent changes in the previous relationships between the people of La Cuesta and the wider society of Puerto Rico, in the microenvironment of the settlement, and in various interpersonal relationships among its inhabitants. The introduction into La Cuesta of a democratic problem-solving social structure upset the equilibrium of its previous isolated social subsystem and resulted in secondary and even tertiary changes and a different level of socio-cultural integration. Some of these repercussions such as

the water system installation were anticipated, but others such as the frictions between teenagers and elders were unanticipated. The general proposition that further changes tend to follow acceptance of an innovation (Kushner, Gibson, Gulick, Honigmann & Nonas 1962:35; Dobyns 1951:31; Bliss 1952:30-32; and Hoselitz 1957:412) because of the interlocking nature of cultural traits (Goldschmidt 1952:136; Malinowski 1922:xvi; Arensberg & Niehoff 1963:58) was certainly borne out in this case.

In terms of Barnett's (1953:90) analysis, the water committee-community meeting innovation produced changes in correlated idea-sets. This is indicated in the La Cuesta request for a member of the research group to preside over the emergency meeting when materials ran out, so that those taking part in it might learn democratic procedure, with which they had very little practical experience, from him.

Another general proposition confirmed once again by this experimental participant intervention states that ready acceptance of an innovation relates to the involvement of the people who are to change in planning and executing execution (Kushner, Gibson, Gulick, Honigmann & Nonas 1962:41-42). The people of La Cuesta individually expressed to interviewers their felt need for a potable water system to bring running water to their homes. In the light of previous reports on the importance of perceived need in successful innovation (Arensberg & Niehoff 1963:53; Linton 1940:468; Dobyns 1951:31; Dobyns 1952:221-222; Goldschmidt 1952:149) the researchers interpreted the desire for running water as an adequate emotional foundation for action. In fostering creation of a problem-solving committee representing the community, the researchers merely sought to provide La Cuesta with social structural tools with which to answer their expressed needs for piped water. The actual planning of the project remained in the hands of the people of La Cuesta who were to perform the great bulk of physical labor involved,

except that the power relationship between La Cuesta and the municipio government left the mayoress a significant role to play in planning and execution as well, and she was able to involve a hydraulic engineer and other officials. Thus virtually everyone whose cooperation was important to achieving the goal of installing running water in La Cuesta households -- an effective majority of the leadership in Lasswell's (1963:101) terms -- participated in planning and executing the project and could feel, therefore, that it was in some degree his or her achievement. That such involvement of all concerned facilitated change in this case confirmed the point made by Chadwick (1948:627), Dobyns (1951:31), Mead (1953:195), Rosensteil (1954:10), Isaacs and Wales (1957:358), Arensberg & Niehoff (1963:67) and others.

The successful conclusion of the La Cuesta running water installation occurred, it bears emphasizing, in a population with no great differences in wealth base. Oberg (1964:7) considers equitable land distribution to be an important, perhaps necessary, condition, for community self-improvement projects in rural farming populations. La Cuesta certainly did not suffer from the handicap of great land base differences that have caused well-drilling projects to fail in Peru (Holmberg 1952).

Participant intervention in La Cuesta enabled the members of the research group to observe social dynamics that could not have been seen had La Cuesta remained quiescent and isolated from the mainstream of Puerto Rican life. By designing and activating a specific social structure in La Cuesta, the researchers thus realized the goal of improving the quality of their research, through achieving the related developmental goal of strengthening independent problem-solving and decision-making organization in La Cuesta.

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